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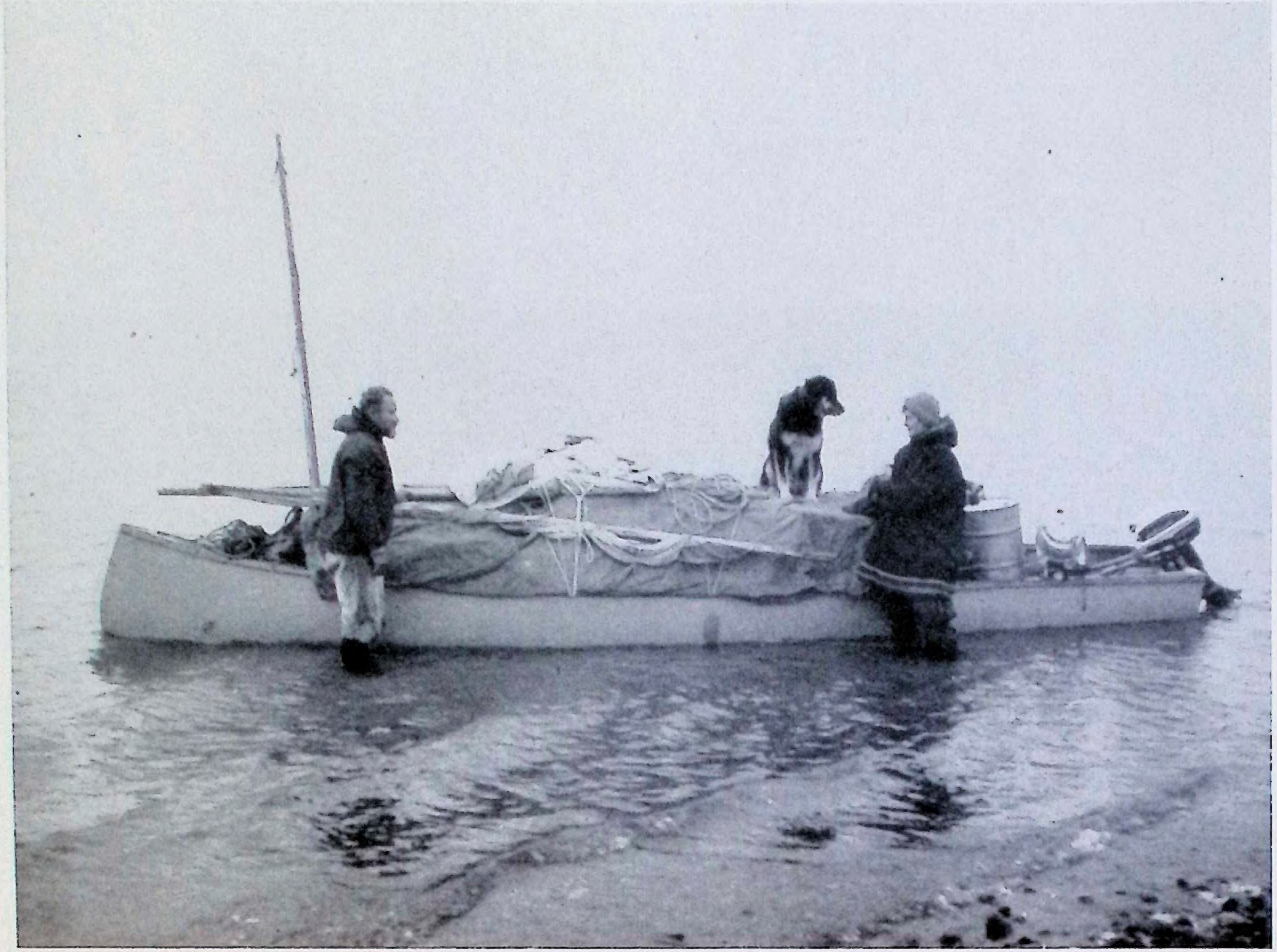
THE BIRDS AND MAMMALS OF ADELAIDE PENINSULA, N.W.T.

BY
A. H. Macpherson
AND
T. H. Manning

1959

PLATE I



Completing the loading of the canoe on the east side of Sherman Basin for the trip to King William Island. T. H. Manning, Betty Macpherson, and the pack-dog. September 8, 1957.

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BY
A. H. Macpherson
AND
T. H. Manning

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CONTENTS

PAGE

Introduction.......... 1
- Previous work.......... 1
- Narrative.......... 2
- Topography.......... 3
- Weather.......... 4
- Ice.......... 4
- Specimens.......... 5

Birds.......... 5
- Numbers.......... 6
- List.......... 6

Mammals.......... 42
- List.......... 42

References cited.......... 58

Illustrations

PAGE

PLATE I. Loading canoe on east side of Sherman Basin for trip to King William Island; T.H. Manning, Betty Macpherson, and the pack-dog. (*frontispiece*)

II. A. Looking southeast from top of a drumlin southeast of camp.......... 59

B. Estuary of Kaleet River.......... 59

III. A. A hill on the east side of the mouth of Red Bay from the southeast 60

B. Hillocks of Precambrian rock between east arm of Trefoil Bay and Kaleet River estuary.......... 60

IV. A. Whistling swan cygnets from Adelaide Peninsula.......... 61

B. Our summer camp.......... 61

V. The region of our summer camp showing Weir Creek, Tern Lake, Crane Peninsula, and Trefoil Bay..........*Photo courtesy R.C.A.F.* 62

VI. Sherman Basin from the west, showing Falcon Inlet and Schwatka Islands..........*Photo courtesy R.C.A.F.* 63

Figure 1. Map of Adelaide Peninsula and part of the southern coast of King William Island.......... iv

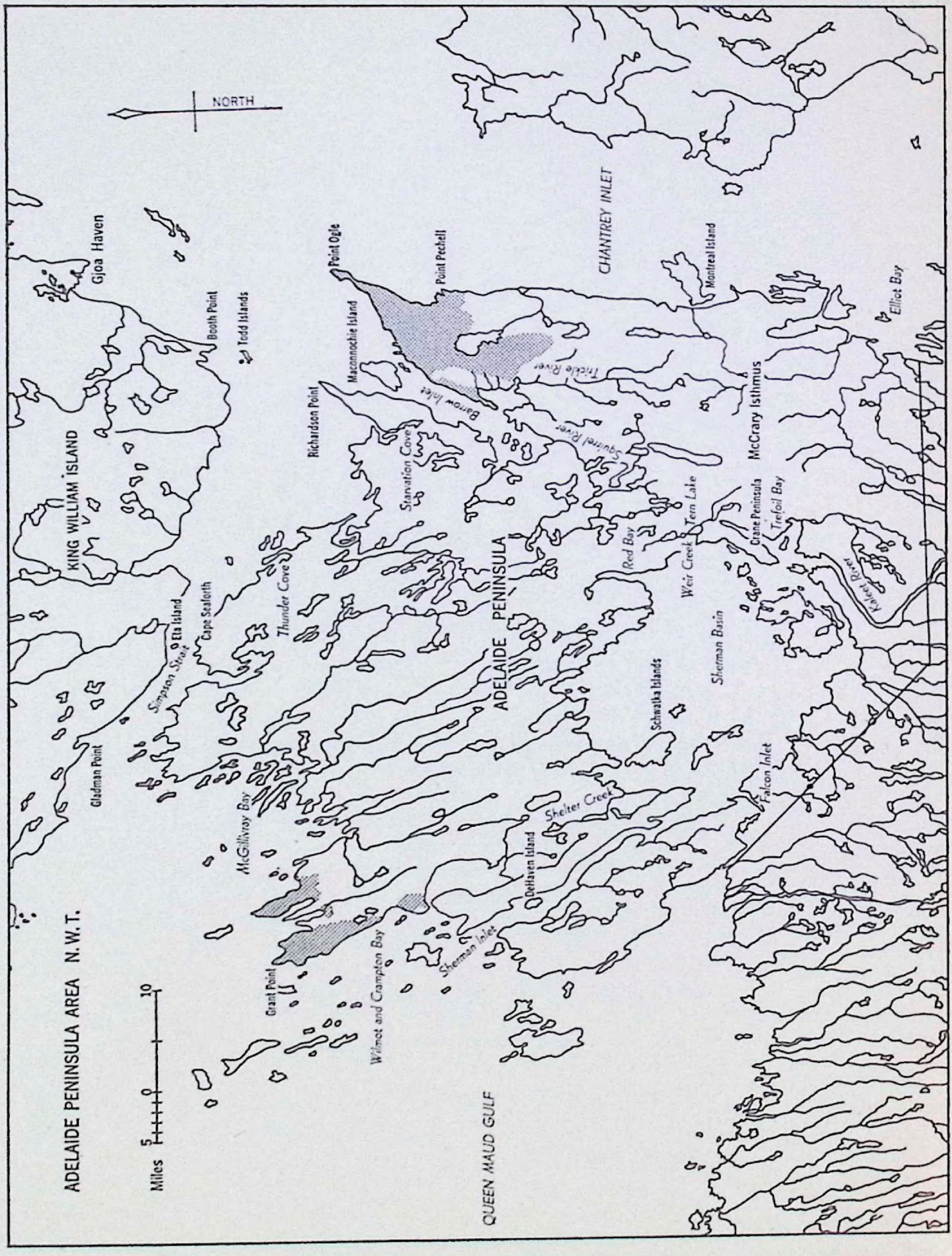

FIGURE 1. Map of Adelaide Peninsula and part of the southern coast of King William Island. The line drawn across the base of the Peninsula delimits the area for which population estimates have been made.

THE BIRDS AND MAMMALS OF ADELAIDE PENINSULA, N.W.T.

INTRODUCTION

During the summer of 1957, we conducted a survey of the vertebrates of Adelaide Peninsula under the auspices of the Natural History Branch of the National Museum of Canada. We were accompanied by Mrs. Macpherson, who was collecting parasites and fish under a grant from the Arctic Institute of North America. We gratefully acknowledge help and hospitality received from Mr. and Mrs. Jameson Bond of Cambridge Bay, and from personnel of the Northern Construction Company and J. W. Stewart Limited, and from the Federal Electric Corporation.

Our collection, which includes 106 specimens prepared by Mrs. Macpherson, totals about 700 birds of 38 species, and some 560 mammals of eight species. These are identified in this report, and field data relative to the status and abundance of each species are summarized. Detailed taxonomic studies were not feasible at the time of writing, nor were they desirable in view of the survey of Prince of Wales Island planned for the summer of 1958. Observations on the birds and mammals by members of previous expeditions to Adelaide Peninsula are included in the report. The bird and mammal lists are supplemented by a brief account of earlier visits to the region and by summaries of our observations on topography, weather, and ice.

PREVIOUS WORK

Adelaide Peninsula was first visited in 1834 by Back. His expedition descended the river that now bears his name and examined the east coast and the north coast as far west as Richardson Point. The west and north coasts were explored in 1839 by Dease and Simpson on a boat journey from the Coppermine River. The region was next visited by the Franklin expedition of 1845 to 1848, perhaps during the spring journey of Gore in 1847, and certainly by the last survivors of Crozier's retreating party, who apparently died of scurvy in 1848 in the neighbourhood of Starvation Cove. Several expeditions went to King William Island and Adelaide Peninsula to search for survivors and records of this expedition. The first of these, under Anderson of the Hudson's Bay Company, spent the first ten days of August, 1855, examining Montreal Island and northeastern Adelaide Peninsula. M'Clintock searched the coast from Montreal Island to near Starvation Cove in May, 1859, on his way to the western and northern coasts of King William Island, where he and Hobson found a record and many relics. The final search expedition of the century was that of Schwatka, who travelled by sledge from Chesterfield Inlet to King William Island in 1880. On his outward journey he searched much of the northern coast of Adelaide Peninsula in May, and on his return journey he travelled through Sherman Inlet and Basin in November. Members of Amundsen's *Gjoa* expedition visited northern Adelaide Peninsula while their ship was frozen in at Gjoa Haven in 1903 to 1905, and Rasmussen visited Starvation Cove in the autumn of 1923. In the same year, a Hudson's Bay Company post was established on the south coast of King William Island opposite

Cape Seaforth, and in 1927 it was moved to its present position at Gjoa Haven. In the summer of 1956, a geographical survey of portions of the northern coast of Adelaide Peninsula and the northwestern coast of Sherman Basin was undertaken by J. K. Fraser and W. Henock of the Geographical Branch, and an annotated list of the birds seen by them has been published (Fraser, 1957).

NARRATIVE

We flew from Edmonton to Cambridge Bay on May 15, and thence to Gladman Point, King William Island, the following day. The local Eskimos were reluctant to transport us by dog-team to Sherman Basin as they were short of dog-food, but with the help of Mr. Jameson Bond, a Northern Service Officer, we finally obtained four teams and left with them on the evening of May 22. We had decided to spend most of the summer on the east side of Sherman Basin near the mouth of Weir Creek (Plate V). Reaching this place on May 28, we made camp on the lower slopes of a hill about one-half mile west of the river mouth (Plate IV, B). One of the Eskimos had left us on May 25 to return home, and as some of the supplies had therefore to be relayed we did not receive them until June 10. A dog was rented for use as a pack-animal during the summer. We had hoped to obtain at least two, but dogs were scarce and we could not persuade the Eskimos to part with more than one. We spent the next six weeks at Weir Creek and on collecting excursions of a few hours to three days in length.

Arrangements had been made for the transport of a canoe belonging to the Arctic Institute of North America from Pelly Bay to our camp on Sherman Basin or, failing that, to either the mouth of Squirrel River or Cape Seaforth. As the canoe did not arrive while the Sherman Basin ice was still in good travelling condition, we planned two walks in search of it. Beginning the first of these on July 25, we walked overland from camp to near the mouth of Squirrel River, where we found the canoe lying on the east bank of the river below the first rapids. On the return journey, we crossed to the coast of Chantrey Inlet opposite Montreal Island, walked south to Elliot Bay, and thence traversed McCrary Isthmus to Sherman Basin, arriving there on July 29. Birds had been relatively scarce in the inland country, and as we had found the canoe we cancelled our planned walk to Cape Seaforth.

Judging that Simpson Strait and Barrow Inlet would be clear of ice, the three of us left Weir Creek for the mouth of Squirrel River on August 8. We launched the canoe on August 12 and made a trip to King William Island for gasoline. On our return journey through Sherman Inlet and Basin, we worked for two days at Falcon Inlet (Plate VI) before returning to our camp at Weir Creek on August 18.

On August 25, we canoed about 25 miles up Kaleet River, where we were stopped by rapids. During the night, the light northeast wind of the previous day shifted to the south, and the water-level in the river dropped by about a foot. This necessitated our wading and pulling the canoe over a few shallow places on our return downstream. Evidently the water-level in Kaleet River, as far as the rapids, is governed by that in Sherman Basin, where a west or northwest wind caused high water and the normal tide amounted to only a few inches. On our way down river, we stopped for a few minutes to examine two cairns which stood together about a quarter of a mile above the northern shore a few miles up river, and we also stopped at several places to collect Rough-legged Hawks, which nested in abundance on the granite bluffs (Plate II B). A day was spent collecting at the mouth of the river.

On our return to Weir Creek on August 28 we continued collecting there until September 8, when we began our return journey to King William Island (frontispiece). After spending three days weather-bound in the vicinity of Shelter River, we revisited Falcon Inlet between September 12 and 15. After our return to Gladman Point on King William Island on September 16, we collected there until our departure on September 25.

Topography

Adelaide Peninsula is defined for this report as that part of the mainland north of the line drawn on the accompanying map (p. iv). Except for the region of Precambrian outcrop on the south side of Sherman Basin, the peninsula has a thick mantle of glacial deposits and is relatively homogeneous in topography. The country is rather flat, and numerous low drumlins and eskers divide it into wide tussocked marshy areas surrounding lakes and shallow weedy streams. The drumlins, whose long axes run about northwest-southeast, seldom exceed 200 feet in height. They extend out to sea on the north coast forming a maze of bouldery points and islands. On the north shore of Sherman Basin the coast is bolder and less complex, and rises to extensive dry uplands in the interior. East of Barrow Inlet and around Grant Point are barren expanses of sand and bouldery gravel. Most of the region is probably underlain by flat-bedded sediments, which were seen in outcrop in three localities. A pale, limy rock was exposed along a low cliff on the northeast shore of Sherman Inlet south of DeHaven Island. Most of the flag-stones at the base of the exposure bore ripple-marks. A small outcrop was seen in the gully of a stream flowing into the southeast corner of Tern Lake. Here the rock weathered into blocks as well as flags, and contained crumbly, poorly consolidated, sandy strata. It was generally buff in colour, but under the water it bore a rusty stain, which was also noted on the walls of the gully. The other exposure was on the side of a hill about 12 miles southeast of Barrow Inlet. It was nearly obscured by boulder-till, but appeared to be limestone, and weathered into massive blocks.

The country near our camp at the mouth of Weir Creek was similar to that of other till-covered areas on Adelaide Peninsula but was more attractive to several species of birds than was most of the surrounding country. Owing perhaps to the proximity of Precambrian outcrop, erratic boulders were very common (Plate III, A), and the crevices between them were used as nesting-sites by Water Pipits and Snow Buntings. An extensive marsh on the north side of Weir Creek, unlike the more typical marshes of the region, was smooth and untussocked. The grasses were short and grew sparsely on a fine sticky mud and were probably occasionally flooded by salt water. The marsh itself was favoured by migrating waterfowl and shorebirds. The shorebirds also utilized an expanse of mud at the seaward edge of the marsh. Another important factor in the abundance of certain species was the presence of a number of islets in Tern Lake, which were used as nesting-sites.

On the south side of Sherman Basin, Precambrian rock outcrops in low hillocks and small bluffs. On parts of Crane Peninsula and elsewhere, the bluffs are close together, and smooth bed-rock or boulder fields connect them, but in most of the region, broad, flat, tussocked cotton-grass marshes, similar to those of the northern part of the peninsula, isolate them. About 12 miles up Kaleet River, this terrain gives place to gently rolling, grassy country with widely scattered bouldery ridges. The igneous rock meets the southern edge of the till-covered country near Falcon Inlet on the west side of Sherman Basin, at Tern Lake on the east side, and near Elliot Bay and Montreal Island on Chantrey Inlet.

Adelaide Peninsula is about 3,000 square miles in area, of which some 500 square miles contain outcrops of Precambrian rock. Tussocked marshes occupy about 65 per cent of the total area; dry stony slopes and ridges, 12 per cent; lakes and rivers, 10 per cent; boulder plains, 4 per cent; and barren areas about 5 per cent. The barren areas include most of the islands off the northern coast of the peninsula and parts of the Schwatka Islands.

Weather

In mid-May, on our arrival in the region, the weather was calm and sunny, but during the last week of May and the first week of June, it was generally overcast and windy with occasional light snow-falls. The last snow fell on June 11. On June 12, the snow began to disappear rapidly, and standing water was noticed on the large marsh near our camp. By evening, the marsh had lost about one-eighth of its snow-cover, and the region as a whole had lost about one-third. By June 13, about one-third of the marsh was free of snow, the ice in the small ponds had candled, and water was standing on the sea-ice. On June 16, two-thirds of the marsh was snow-free. Ponds on the marsh were largely ice-free by the 18th, but the ice in the larger lakes had melted only around the shores.

From mid-June to the end of July, periods of fairly calm, sunny weather and wet, windy weather, of some three to five days each, followed each other in a rather regular pattern. During the first half of August, the weather was variable but generally rather windy and overcast, and in the latter half of the month and the first two days of September it was remarkably fine. On September 6 and 7 the temperature was unseasonably high, but conditions soon became more normal. The first snow fell on September 13, by which date the surface of the marshes and the shallow ponds were lightly frozen.

Ice

Water first appeared around the shore of Sherman Basin at the beginning of July. The lead increased slowly until July 16, when it widened suddenly to about 100 yards. The shallow water near camp thawed quickly, and a few days later the nearest unbroken ice to the southwest was about three miles from shore. A strong wind from the east-northeast drove in broken ice on July 31, and it appeared probable that the Sherman Basin ice had disintegrated entirely by that date. By August 2, only a small quantity of broken ice was visible among the islands and on the beaches. No ice could be seen next day.

The head of Barrow Inlet was seen to be open on July 26, and the next day Chantrey Inlet appeared entirely ice-free south of Montreal Island. North of the island the ice appeared unbroken. On August 12, Barrow Inlet contained a little loose pack, and a rather dense narrow belt of ice lay against Point Richardson and the shore to the west. Simpson Strait, however, was practically ice-free. Apart from a few isolated floes, the last pack seen was a small quantity near the mouth of Sherman Inlet on August 15.

SPECIMENS

Almost every specimen collected was weighed. The balances used were the following:

A 1,500 gm triple-beam balance reading to .1 gm.
A 2,000 gm spring balance reading to 25 gm.
A 12,000 gm spring balance reading to 500 gm.

The amount of fat on each specimen was described as follows: 1, no fat; 2, a very little fat; 3, a little fat; 4, moderately fat; 5, very fat; 6, extremely fat. The length of the testis or the diameter of the largest ovum was recorded for each bird, and the length of the testis, and whether or not it was descended, or the condition of the vagina (perforate, imperforate, or with plug) and the presence and number of embryos or scars were recorded for each mammal. Observations were also made on the presence of the brood patch in birds and of active mammary tissue in mammals. The distribution of pigment on the velum of mammals was also recorded. The humeri and femurs of specimens of several species of birds were preserved, as well as the bacula and long bones of most mammal specimens and the entire skeletons of most of the lemming specimens. The skeletal material has been prepared by Manning, with the aid of a dermestid colony. About 110 salted specimens (swans, geese, ducks, cranes, and the larger gulls) have been prepared by Mr. S. Gorham and Mr. G. Blanchard, of the National Museum of Canada. A list of the specimens taken has been given for most species. For those species of which large numbers of specimens were taken, the specimen data have been summarized briefly.

BIRDS

We recorded 45 species of birds from Adelaide Peninsula. Twenty-nine of these were definitely breeding in the region, and seven others were probably breeding there. Three species, Brant, Sanderling, and Snowy Owl, occurred as spring and autumn migrants. The remaining six species, Pintail, Pomarine Jaeger, Herring Gull, Thayer's Gull, Black Guillemot, and Common Eider, are considered vagrants. The Pintail rarely, if ever, breeds at this latitude, and the Herring Gull is absent from the central Arctic coast, although common locally to within a few miles of it. The lack of breeding Thayer's Gulls may be caused by the absence of suitable cliffs. There are no previous records of the Black Guillemot on the mainland coast or in the lower tier of islands between Cape Bathurst and Somerset Island.

We were surprised to encounter no Savannah Sparrows, which are common at Perry River some 100 miles to the west, and to record no wanderers from the northern fringe of the taiga.

NUMBERS

The numbers of birds summering in Adelaide Peninsula have been estimated from our observations by the method of Manning (Manning *et al.*, 1956: 6). The number of individuals of a given species seen per hour of observing is multiplied by a figure, the size of which is related to the conspicuousness of the species, to obtain an estimate of the number per square mile. The multipliers are occasionally adjusted to take special circumstances into account. The product is then multiplied by the area of similar habitat to obtain the estimated population on that habitat. For most species the nature of the bed-rock seemed to have little effect on population; the main exceptions were the hawks, which were most numerous on the Precambrian country where they nested on cliff ledges. We found, however, that many species were numerous near the coast and scarce or absent inland, and the population estimates are therefore based on the calculated density of each species on the coastal strip and on the inland country. The coastal strip has been taken to be 4 miles wide on the average, and to extend around Adelaide Peninsula and Sherman Basin. The multipliers listed in Manning *et al.* (1956: 6) have been used in this report with the addition of three others, one-quarter for the Whistling Swan, one for the Canada Goose, and one-half for the Snow and Blue Goose. The actual number of birds and the time spent observing are given in the text, so that changes in the bird population of the region can be assessed in a fairly exact manner by a future observer. For species whose abundance changed markedly during the season, for example those that were commoner as migrants than as residents, two or more estimates of population density have been calculated. These latter estimates usually apply only to the country in the vicinity of our summer camp, where extensive grassy marshes and tide-flats attracted large numbers of migrating waterfowl and shore-birds.

An account of our movements is given above. It is believed that during the summer enough of the peninsula was examined to allow fairly exact population estimates to be made. The only major habitats that we did not examine in detail were the barren sandy areas on the northwest and northeast extremities of the peninsula, the barren shingle islands of Simpson Strait, and the well-drained inland till country of western Adelaide Peninsula.

LIST

Yellow-billed Loon, *Gavia adamsii* (Gray)

About half the 15 large loons seen or heard on Adelaide Peninsula were sufficiently close for us to see that their bills were yellow. Since there is little evidence of the occurrence of the Common Loon this far west on the arctic coast, the others are assumed also to have been Yellow-billed Loons.

A few Yellow-billed Loons probably nest on Adelaide Peninsula, but apart from our observations of their occurrence as summer residents, the only evidence is that of King (1836, 2:21), who says, "great northern divers, . . .as also a smaller species of diver, were found, with young ones just hatched . . ." on August 2 at Montreal Island.

The first Yellow-billed Loon was identified on July 13, and five others were seen on the sea near our camp during the next three days. One was heard near the head of Barrow Inlet on July 25, and one seen near there on August 12. A single bird was noted on a lake near Elliot Bay on July 28. This species was observed near the entrance to Sherman Inlet on August 15 and September 16, and at Falcon Inlet on August 16. The cries of what were probably Yellow-billed Loons were heard on southern King William Island on September 20 and 23.

Arctic Loon, *Gavia arctica pacifica* (Lawrence)

The resident summer population of the Arctic Loon on Adelaide Peninsula is estimated to be 350 adults (June 22 to August 30, 55 seen in 241½ hours of walking), or about one-quarter that of the Red-throated Loon. Fraser's (1957:147) statement that the Arctic Loon far outnumbers the Red-throated Loon in this region, though surprising, perhaps reflects local differences in the relative proportions of these species. The Arctic Loon prefers comparatively large, deep lakes for nesting sites, and its distribution therefore tends to be more irregular than that of the Red-throated Loon. We were surprised to see no Arctic Loons inland on our walks across the eastern part of the peninsula, even though we passed a number of large lakes between Sherman Basin and Barrow Inlet. This has had a considerable effect on the population estimate.

The first Arctic Loon was seen on June 19, and the first pairs on the 22nd. A pair with two small young was seen on August 8, and a pair with two half-grown young on August 24. Several Arctic Loons were noted from the canoe, particularly in inlets and estuaries such as Red Bay, Sherman Inlet, Falcon Inlet, and the mouth of Kaleet River.

Red-throated Loon, *Gavia stellata* (Pontoppidan)

The Red-throated Loon is an abundant breeding resident of Adelaide Peninsula and far outnumbers the Arctic Loon in all parts of this region visited during the summer. The resident summer population is estimated to be 1,400 adults.

Population and distribution. Red-throated Loons were commonest in the vicinity of our summer camp in the first few days after their arrival, when they attained a local density of a little over one per square mile (June 18 to 28, 63 seen in 69 hours). Their summer population density was about two in 3 square miles in the neighbourhood of our camp (June 29 to August 30, 113 seen in 178½ hours), on the plain west of Red Bay (June 29, 5 seen in 8 hours), and in the country between our camp and Kaleet River (July 7 to 9, 8 seen in 16½ hours). An average density of about one Red-throated Loon in 2½ square miles has been calculated for the country traversed on our first crossings of the peninsula (July 25 to 29, 6 seen in 37½ hours), the east coast south of Montreal Island (July 27 and 28, 2 seen in 6 hours), the country around Falcon Inlet (August 15 to 17, 5 seen in 14 hours), and the vicinity of Shelter Creek (September 9 to 11, 2 seen in 17 hours). None were seen on our second walk to Barrow Inlet (August 9 and 10, 26½ hours), nor at Falcon Inlet on our second visit (September 13 and 14, 18½ hours). Red-throated Loons were still common when we left Adelaide Peninsula on September 16.

Breeding and behaviour. The first Red-throated Loons were seen on June 18, and the first pair was seen on the 22nd. They were frequently observed at pools of open water near our camp in late June, being extremely vocal and occasionally aggressive. Fighting sometimes occurred between two members of a group of three and was probably associated with pair formation. A bird in threat posture would confront its opponent with the neck and bill extended close to the surface of the water and with one wing held up, back, and about half-open.

Five nests of this species were found between July 7 and 21 within the area commonly covered from our camp. Of these, three contained two eggs each, and two only one. The first pipped egg was noted on July 23. On July 31, all the nests were empty, and a downy was caught swimming away from one of them.

A young Red-throated Loon, of adult size, was seen with one parent on a small pond near Shelter Creek on September 10.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
B41................	M	June 25	–	1,830	T.: 17 mm
B46................	M	July 1	4	1,850	T.: 18 mm
M322..............	–	July 24	2	32.7	6 hr. old; yolk sac 2.7 gm
M341..............	M?	July 31	3	179	Egg tooth
M342..............	F	July 31	2	1,410	Parent of M341

Whistling Swan. *Olor columbianus* (Ord)

The Whistling Swan is a fairly common summer resident of Adelaide Peninsula, with an estimated population of 200 adults (June 18 to July 24, 81 observations in 205½ hours). None were noted more than four miles from the sea.

Migration. Whistling Swans were first observed on June 4. During the next few days, single birds, pairs, and small flocks of between three and 12 were seen flying northward, sometimes spending a few hours feeding and resting in the marshes near our camp. One pair which stayed there for about ten days in early June was seen chasing off other swans. The estimated population between June 6 and 17 within the area commonly covered from camp was one swan in 2 square miles (126 seen in 76½ hours). A dark bird, presumably a yearling (Bent, 1925:285), was seen with 11 adults in a flock, and another was seen with two adults, both on June 6.

Breeding. We first saw a pair of nesting swans on June 25, though the nest was not actually visited until July 14 when it contained unpipped eggs. Both parents remained at this nest at least until June 30, but for a period in early July only the sitting bird could be seen. Both parents were there on July 14. On July 16 the parents moved off, presumably with three young, when Manning was 1½ miles distant. He found the fourth downy half out of the shell, cold and apparently dead, though its heart was still beating. The other nest was not found until July 6. It was frequently visited thereafter, but the presumed male was not seen until July 12. On July 10, one of the eggs in this nest peeped when gently shaken. Two eggs had hatched by July 14; the other two were unpipped. One of these had hatched by July 16. The other was still unpipped, and we failed to hatch it successfully by artificial incubation. If male Whistling Swans regularly desert their mates for part of the incubation period, small groups and flocks of swans seen within the breeding range of the species may therefore be breeding adult males, and not necessarily immature and non-breeding birds; in fact, a Whistling Swan collected from a group of two (of approximately the same size) on July 10 was a male, apparently breeding.

Behaviour. Differences in the behaviour of an incubating swan when exposed to apparent danger from different sources and under varying circumstances were noted. When visiting her nest, we usually approached over a wide marshy plain, and on these occasions when we were one-half to one mile distant, she left the nest and walked slowly down to a nearby bay. Twice, however, when we came suddenly into view from behind a rocky ridge some 300 yards distant, she hid behind her nest, a bulky mass of vegetation, with only her head, or her head and part of her neck, in sight. There she stayed and allowed a close approach, once to within 30 yards. On being disturbed on another occasion the swan flew down to the sea-ice and alighted about 150 yards from a basking Ringed Seal. She walked toward it, honking regularly, and the seal, after a prolonged and intent scrutiny, plunged down a hole in the ice. After a short interval the seal looked out, and seeing that the swan had walked off, it climbed out again. The swan advanced, and the episode was repeated twice, the whole affair occupying about half an hour.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				kg	
M147	F	June 21	3	5.6	L.O.:10 mm, from flock, no empty follicles
H237	M	July 10	–	7.5	T.:21 mm, one of two together
				gm	
M282	F	July 16	–	33.5	From egg pipped July 14
M283	M	July 16	4	–	T.:18 mm, parent of M282, M286, M285
M284	–	July 16	4	–	From abandoned egg
M285	–	July 18	–	29.4	Hatched July 11 or 12, kept captive
M286	–	July 18	–	31.1	Hatched July 11 or 12, yolk sac 1 gm, kept captive

Canada Goose, *Branta canadensis parvipes* (Cassin)

The Canada Goose is the most widespread breeding goose of Adelaide Peninsula. Its resident summer population is estimated to be 1,500 (June 20 to July 31, 85 observations in 202 hours). About one-tenth of these are thought to be non-breeding birds, probably yearlings, and those which had lost their nests or mates. During the breeding season these birds were usually seen in pairs, but sometimes in threes or small flocks. Anderson (1940:11) saw several Canada Geese on Montreal Island on August 3, 1855.

Migration. The first Canada Geese appeared in the region of our summer camp on June 8. Small flocks, groups, and pairs were commonly seen feeding and resting in the nearby marshes during the next ten days. Between June 9 and 19, there were about five Canada Geese per square mile in this region (370 observations in 62 hours). Several flocks of between nine and 40 Canada Geese feeding in marshes or flying southward were seen between August 24 and September 12 at various places in Sherman Basin, including the vicinity of Shelter Creek, near which a large flock was seen on August 26, 1956 (Fraser, 1957:197).

Population and distribution. The distribution of Canada Geese on Adelaide Peninsula was patchy. The population on the plain west of Red Bay was about three in 2 square miles (June 29, 12 seen in 8 hours), and only slightly less in the country between our camp and Kaleet River (July 7 to 9, 21 seen in 16½ hours). None were noted on our walks across the Peninsula (July 25 to 29, 38 hours; August 9 to 10, 26½ hours), nor at Falcon Inlet (August 15 to 17, 14 hours). A flock of 30, seen twice, and a family group of four, are responsible for a high population of about nine Canada Geese in 2 square miles recorded for the Kaleet River on August 25 and 26 (64, including young, in 13 hours).

Breeding. The first nests were found on the low coastal plain just west of Red Bay. Here small streams, flowing from the hills behind, spread out and dissect a rather heavily vegetated, very wet marshy area. Two of the nests seen were on small hummocks in this marsh, and one on a little islet in a lake. All were lined with down, and the only one reached contained six slightly incubated eggs.

Two nests were seen on islets in lakes in the Precambrian country on July 7 and 8, but neither could be reached. On July 19, three nests on islets in Tern Lake were visited. One contained five downies; one, six eggs (four pipped); and one, five (unpipped) eggs. All these eggs had hatched by July 23.

Moult. A goose collected at Kaleet River on August 25, one of a flightless pair with two young, was growing new wing and contour feathers; her first primary feathers were about four inches long. All the members of a flock of about thirty encountered later in the day could fly a short distance, including young birds, which were far larger and better fledged than those of the family seen previously.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Flattened Wing	Exposed Culmen	Tarsus	Remarks
				kg	mm	mm	mm	
M71	F	June 11	5	2.5	401	34.2	67.2	L.O.:36 mm
M72	F	June 10	4	2.4	388	37.4	72.2	L.O.:20 mm being resorbed, one empty follicle
H79	M	June 11	–	2.1	393	35.1	72.9	T.:30 mm, one of pair
H80	M	June 10	–	2.2	405	38.0	74.0	T.:15 mm, one of pair
M124	M	June 14	–	2.4	391	38.1	72.4	T.:14 mm, from flock
H110	M	June 14	–	2.7	391	39.9	76.1	T.:15 mm, from flock
M125	F	June 14	–	2.2	376	36.3	72.7	Ovary granular, from flock
M106	F	June 14	5	1.8	369	37.1	68.5	Ovary granular, from flock
H127	M	June 16	3	2.4	393	37.2	74.6	T.:19 mm, from flock
B34	F	June 19	5	2.3	–	–	–	Ovary granular, from pair
H201	F	June 29	1	1.8	356	35.2	67.2	Ovary granular, with H202
H202	M	June 29	1	2.3	388	38.3	77.2	T.:20 mm
M198	F	June 29	4	2.0	384	33.6	70.8	One of pair with nest and 6 eggs
M199	F	June 29	3	2.0	380	35.0	69.2	One of pair with nest, L.O.:4 mm
M200	F	June 29	3	2.0	–	–	–	One of non breeding pair, L.O.: 6 mm
M201	F	June 29	4	2.2	377	–	71.1	One of non-breeding pair, L.O.: 8 mm
M202	M	June 29	2	2.4	388	37.4	70.7	One of pair with nest
M293	F	July 19	1	1.7	389	35.8	71.7	L.O.:3 mm, parent of M288 to M292
M294	F	July 19	1	1.6	365	34.8	68.6	L.O.:3 mm, parent of M305 to M310
M304	F	July 21	1	1.8	402	35.1	74.0	L.O.:3 mm, parent of M295 to M297, flightless
H441	F	Aug. 25	3	2.3	–	37.2	70.5	Ovary granular, with an adult and 2 young
H442	M	Aug. 25	4	3.0	–	36.4	74.2	T.:13 mm, almost flightless, from flock
H443	F	Aug. 25	2	1.6	–	28.0	66.8	Ovary clear, skull soft, almost flightless, from flock
				mg		Weight of yolk sac gm		
M288	M	July 19	4	75.8		7.2		Young of M293, egg tooth
M289	F	July 20	4	70.0		4.3		
M290	F	July 20	4	71.3		4.9		
M291	F	July 20	4	70.8		3.8		
M292	M?	July 20	4	68.5		4.0		
M295	M	July 21	4	72.8		5.6		Young of M304, egg tooth
M296	M	July 21	4	68.1		6.4		
M297	F	July 21	4	70.7		5.2		
M305	M	July 21	4	63.4		3.6		Young of M294, hatched July 19 to 21, egg tooth
M306	F	July 21	3	65.6		1.8		
M307	F	July 21	4	61.7		1.9		
M308	F	July 21	4	62.2		8.7		
M309	F	July 23	3	57.4		0.3		
M310	–	July 23	2	50.2		3.7		

Brant, *Branta bernicla hrota* (Müller)

Brant occurred in the region of our summer camp in mid-June and early September, but none were observed during the breeding season.

A flock of five was seen on June 14 and a pair on June 20, feeding in the marshes near camp. On September 5, a flock of about 120 (two young collected) swam into the mouth of Weir Creek, and on September 7 a flock of about 40 were feeding near there on the tidal grassland.

One of the three adult Brant collected matches grade 1 of Manning (Manning *et al.*, 1956: 29, 142) in breast colour, and the other two best match grade 2. All may therefore be considered normal *hrota*. Only one of at least 150 Brant seen at Perry River in 1949 (Hanson *et al.*, 1956:36) was of this race, although Gavin (1947: 198) recorded breeding *hrota* on the islands of Queen Maud Gulf east to the mouth of Sherman Inlet. There is as yet no evidence of intergradation in the Brant of the central arctic mainland, although it is clear that the eastern and western races intergrade on Prince Patrick Island (Manning *et al.*, 1956: 30).

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H111	F	June 14	–	1,300	L.O.:40 mm from migrant flock
M149	F	June 20	1	–	3 empty follicles. Mate of M150
M150	M	June 20	1	–	T.:27 mm
M496	M	Sept. 5	5	1,410	From migrant flock; juv.
M497	F	Sept. 5	5	1,325	From migrant flock; juv.

White-fronted Goose, *Anser albifrons frontalis* Baird

The White-fronted Goose was a common migrant in the spring on the eastern shores of Sherman Basin but was much rarer in the summer; only one nest was found. The "laughing Geese" seen by Anderson (1940-41: 11) near Point Pechell on August 6, 1855, might have been White-fronted Geese.

Four migrant White-fronted Geese were seen on June 3, five on the 4th, and 42 on the 6th. They remained numerous for about ten days; between June 6 and 16 the population in the vicinity of our camp is estimated to have been about five in 2 square miles (181 observations in 71½ hours). The early migrants, seen between June 3 and 6, flew through without stopping. None were collected. Those that arrived later apparently intended to nest in the general area, for they were frequently seen feeding on the marshes and making short flights. These observations suggest a spring migration through Adelaide Peninsula to a breeding ground farther north. Between June 17 and July 10, White-fronted Geese were infrequently seen, and most of our observations (20 in 117 hours) were probably made on a single non-breeding pair. None were seen after July 13, when an incubating female and a clutch of six eggs were taken from the only nest in the vicinity of our camp. The nest was situated on a bouldery hillside near a small lake on Crane Peninsula. Five of the eggs were pipped next morning, and all but two had hatched by evening. The others hatched on July 15. The eggs measured 78.2 × 52.3, 80.1 × 53.6, 82.0 × 52.9, 79.7 × 51.9, 77.5 × 51.8, and 79.6 × 52.7.

The downies have dark olive upperparts, matching *YYL-4-2° on the rump, with paler yellowish areas on the forehead, nape, and between the shoulders, the latter matching YYL-8-9°, and paired patches on the rump and on the scapular tracts (one lacks the latter). Their underparts are pale yellowish buff, or OY-17-7°. Comparison with the illustration of Hanson *et al.* (1956: 39) shows that the Adelaide Peninsula downies resemble more closely those from Alaska than those from Perry River, and the differences between the two latter series are therefore probably not geographical.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Flattened Wing	Exposed Culmen	Tarsus	Remarks
				kg	mm	mm	mm	
H56........	M	June 8	–	2.8	432	52.8	74.0	T.:25 mm
M54........	F	June 9	–	2.3	387	47.6	67.5	L.O.:1 mm
M134.......	M	June 14	3	2.1	371	51.9	70.1	T.:14 mm, from flock
B29........	M	June 14	–	2.5	392	48.0	71.5	T.:13 mm
H128.......	M	June 14	3	2.4	409	53.1	75.0	T.:19 mm
B28........	M	June 14	–	2.5	411	51.4	75.0	—
M105.......	F	June 15	5	2.0	385	47.9	72.2	Ovary granular, single
H259.......	F	July 13	2	2.0	386	50.3	71.7	L.O.:3 mm, brood patch, parent of downies below
				gm				
H260.......	M	July 16	3	72.5	–	–	–	Yolk sac, egg-tooth, hatched July 14 to 15
H261.......	F	July 16	3	79.4	–	–	–	
H262.......	F	July 16	3	74.4	–	–	–	
H264.......	M	July 17	2	64.6	–	–	–	
H263.......	F	July 17	2	68.8	–	–	–	
H265.......	F	July 17	2	65.5	–	–	–	

Blue and Lesser Snow Goose, *Chen caerulescens caerulescens* (Linnaeus) and *Chen c. hyperborea* (Pallas)

These forms are tentatively considered as distinct subspecies (*see* Manning, 1942, and Manning *et al.*, 1956: 32, 33).

Scattered pairs of Lesser Snow Geese evidently breed on the southeast side of Sherman Basin, and there is apparently a mixed colony of this form and the Blue Goose somewhere in the vicinity of Kaleet River. Dease and Simpson (Simpson, 1843: 379) saw vast numbers of Snow Geese migrating south over Cape Herschel, King William Island, about August 25, 1839. This observation suggests the presence of an unknown breeding-ground, perhaps on King William Island.

The spring population of this species in the vicinity of our camp was about one in 5 square miles (June 10 to 27, 36 observations in 95½ hours), of which just under one in seven was a Blue Goose. Very few were seen flying farther to the north. The only Blue and Snow Geese seen in the autumn were a flock of six and a flock of about forty, of which 12 were young, at Falcon Inlet on September 12.

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* This and subsequent coded colour names refer to the colour atlas of Villalobos-Dominguez and Villalobos (1947).

A nest was found on July 12 on the brink of a cliff about 100 feet in height on the southeast side of Crane Peninsula. Both parents (Snow Geese) were in attendance. Four of the five eggs had hatched, but one chick was still unfluffed on July 13. The last egg hatched next day.

On a trip up the Kaleet River on August 25 and on our return journey the next day, we encountered ten flocks of about 15 adults and 25 young each, and three flocks of about 30 adults each. Roughly one adult in 15 and one young in 10 were Blue Geese. Most of the geese, both adults and young, were just able to fly. The following day a flock of six was seen at the mouth of the river.

An egg from the nest mentioned above measured 82.0 × 53.2 mm. The incubating bird had a flat follicle, 40 mm across, of a fibrous, spongy consistency and the colour of clotted blood, which was attached by a stalk to the ovary and deformed by the pressure of the organs to a shape rather like that of a dried fig.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H240	F	July 13	3	91.0	Egg tooth, young of H258
H255	F	July 15	3	80.0	
H256	F	July 15	3	82.6	
H257	F	July 15	3	79.4	
H258	F	July 13	2	1,925	
M450	F	Aug. 26	2	–	All juveniles, barely flying
M451	M	Aug. 26	2	–	
M452	M	Aug. 26	2	--	
M453	F	Aug. 26	2	–	

Pintail, *Anas acuta* Linnaeus

Pintails were observed in the region on only three occasions. No evidence of breeding was noted. On June 25, a drake was collected from a group of two drakes and a duck, and a pair was seen in the same area two days later. On July 13, a drake and two ducks were disturbed from a small marsh on Crane Peninsula.

SPECIMEN COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
M177	M	June 25	4	997 gm	T.:38 mm

Oldsquaw, *Clangula hyemalis* (Linnaeus)

Oldsquaws are the commoner of the ducks nesting on Adelaide Peninsula with an estimated resident summer population of 10,000.

Population and distribution. The spring population of Oldsquaws in the neighbourhood of our camp was about five per square mile (June 16 to

June 30, 236 observations in 88 hours). In the Precambrian country, and in that part of the till lying within four miles of the sea, Oldsquaws attained a summer density of about four per square mile (July 2 to 31, 277 observations in 147 hours) but farther inland were only about one-quarter as common (July 25 to 29 and August 9 and 10, 31 observations in 60½ hours). Small groups and flocks of Oldsquaws were common on Barrow Inlet and Sherman Basin on August 12, 18, and 25 (420 seen in 14 hours canoeing). The last Oldsquaws seen were encountered in flocks on Sherman Basin on September 8. Most of these flocks were small, but one was composed of an estimated 1,500 birds.

Breeding. A very few of the smaller tundra ponds were thawed to the bottom when the first Oldsquaws arrived on June 16. Most of them were paired, but some were in groups and small flocks. They were distributed both on pools and cracks in the ice and on ponds and lakes on land. Fighting was observed between two drakes on June 27 and between two ducks on July 4.

On July 19 and 23, four nests were found on an island in Tern Lake, two with five eggs and two with seven. All the eggs from one of the larger clutches, except for two addled ones, were hatched by July 31. On the same date, the eggs in only one of the other three nests were pipped, but all these nests were empty on August 3. Two groups composed of one adult and seven young were noted on July 31 and August 16.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
M163..............	F	June 22	3	682	Mated, L.O.: 7 mm
M236..............	F	July 6	1	641	Mate of M237, L.O.: 25 mm at least 1 empty follicle
M237..............	M	July 6	1	700	T.:32 mm
M238..............	F	July 6	1	562	Mate of M239, L.O. 13 mm no apparent empty follicles
M239..............	M	July 6	1	663	T.:29 mm
M334..............	F	July 30	2	44.0	Yolk sac approx. 5 gm Young of M337
M335..............	F	July 30	2	38.4	
M336..............	M	July 30	2	41.3	
M337..............	F	July 30	1	606	L.O.: 1 mm
M354..............	M	Aug. 2	2	154	No yolk sac
M355..............	M	Aug. 2	2	156	

Common Eider, *Somateria mollissima* (Linnaeus)

A bird seen in McGillivray Bay on September 16 was identified by both of us as a Common Eider drake in eclipse plumage. It is described in our notes as showing a large area of white on the base of the wings and the back, and having a noticeably pale bill. This was the only eider seen which was not identified as a King Eider. Gavin (1947: 200) has reported seeing one or two pairs of *S. m. v. nigra* on the islands of the southeast coast of King William Island, and our record may be referred to this race.

The statement of Fraser (1957:197) that Pacific (Common) Eiders are scattered throughout the area but localized in quantity around Simpson Strait, is supported neither by our observations nor by information obtained from Eskimos.

King Eider, *Somateria spectabilis* (Linnaeus)

The King Eider nests in abundance on Adelaide Peninsula.

Population and distribution. The shallow tundra ponds in the marshes near our camp were occupied by King Eiders as soon as water appeared on them, about June 12, and were favoured resorts of breeding and non-breeding birds until well into July. The average population in the region of our camp between June 12 and July 13, was about five per square mile (698 observations in 195 hours), and the total bird population of Adelaide Peninsula during that period is estimated to have been 10,000, including 1,000 non-breeding birds confined largely to the coastal marshes. Later in the summer, the King Eider population in the region of our camp had decreased to about one per square mile(July 18 to August 28, 64 seen in 73½ hours), and the total population of the peninsula to about 5,000. When modified to compensate for differences in visibility, our observations indicate a fairly uniform population of King Eiders throughout most of the region visited, including the plain west of Red Bay (June 29, 5 seen in 8 hours), the country between our camp and Kaleet River (July 7 to 9, 7 seen in 16½ hours), and the inland till (July 2 to 29, 11 seen in 34 hours; August 9 and 10, 26 seen in 26½ hours). None were recorded in mid-August at Falcon Inlet (14 hours), or in the region of Kaleet River (August 25 to 28, 30 hours), or near Shelter Creek (September 9 to 11, 17 hours).

Migration and breeding. The first King Eiders, two drakes and a duck, were seen on June 9. Excluding a flock of 26 drakes, which flew over on June 11, the sexes occurred in about equal numbers in early June. The females had probably begun to lay by June 25, for drakes, alone or in groups, began to preponderate on that date. The last flock of drakes was seen on July 13. Nests containing five eggs each were found on June 29 and July 10. The eggs in the first nest found were almost, if not quite, unincubated. Two more nests containing unpipped eggs were found on July 19 on separate islands in Tern Lake. Four more nests were found on one of these islands, two on July 21 and two on July 23. The eggs in the former two clutches were uncoloured, and only one was in a down-lined nest; two eggs were in the unlined nest, and two outside it. All these eggs were fresh or nearly so, except one, which was addled. The first young were seen on July 26 and 27. A brood noted on August 23 was almost fullgrown.

Of the six clutches counted, the average size was 4.4 eggs (range 2 to 5). Nine broods of young, accompanied by single adults, were noted between July 26 and August 24. The average brood, including groups that might have been made up of more than one family, was 6.2 young (range 3 to 9).

On September 15 and 16, many small flocks were seen in the region of Simpson Strait, and on September 21 and 23 flocks were still common on the southern King William Island coast.

Behaviour. On September 23, a young King Eider was chased out of a flock by a Gyrfalcon and forced to the ground. The Gyrfalcon landed nearby. When Macpherson approached the birds with the intention of collecting the Gyrfalcon, the King Eider ran toward him, and, passing within a foot of his boots, it attacked the pack-dog behind, which incapacitated the duck with a bite.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
M148	F	June 20	3	1,557	Mated, L.O.: 6 mm
H148	F	June 21	5	1,820	Mated, L.O.: 30 mm
B38	M	June 21	4	1,560	T.:25 mm
M168	M	June 24	5	1,630	T.:25 mm
M174	M	June 25	1	1,570	T.:19 mm
M175	M	June 25	3	1,650	T.25 mm
M176	M	June 25	4	1,720	T.:35 mm
H178	F	June 25	4	1,700	Egg in oviduct
M240	F	July 6	3	1,198	At least 4 empty follicles
H296	F	July 21	2	1,470	Empty follicles
M330	F	July 26	1	–	With downies
M346	F	July 31	1	–	With downies
M357	F	Aug. 2	1	–	With downies
M372	F	Aug. 2	3	–	No brood patch
B108	F	Sept. 23	4	1,500	Bursa: 30 mm

plus 10 downy young between July 24 and August 2.

Rough-legged Hawk, *Buteo lagopus s. johannis* (Gmelin)

Population. Rough-legged Hawks are confined largely to the Precambrian country, but they also nest occasionally on erratic boulders on the drift, probably in considerable numbers in years of high lemming density. The estimated resident summer population of Adelaide Peninsula in 1957, 450 adults, is derived from calculated densities of three pairs in 7 square miles of Precambrian country (73 observations in 81 hours), and one pair in 30 square miles of suitable country in the boulder-strewn till (41 observations in 482 hours). Large boulders only occurred in about one-tenth of the till country, and only one occupied nest was actually found in the coastal till region. Within four miles of our camp, however, there were at least six disused nesting boulders, some of which were temporarily occupied in June. No Rough-legged Hawks were seen more than four miles from the coast in 60½ hours of observation.

Colour phase. Only two of the 106 Rough-legged Hawks seen during the summer were considered to differ markedly from the usual pale-phased form of the Canadian barrens. These two were much darker, and both appeared to be mated to normal pale birds.

Breeding. The first strong defence reactions at nest-sites were noted between June 8 and 25. Two nests, with four and five eggs respectively, were found on July 6. These nests, and those found later, are listed in tabular form below.

Date	No. of eggs	No. of young	Remarks
July 6	4	–	–
	5	–	–
8	3	–	–
August 18		3	Half-fledged
25		3	–
26		3	–
		2	(+?) one or more may have flown.
		3	–
		3	–
27		2	+1 apparent young flying
28		4	
		3	

The only food species seen at the nests or in the gullets of these birds was the Brown Lemming (*Lemmus*), but unidentifiable lemming remains were also noted.

The colours of four eggs from one clutch examined were as follows: background colour, OOY-19-3°; colour of pattern, SO-14-4° (noted on 3); SO-6-10°, SO-9-6°, SO-12-6°, and SO-13-6° (each noted on one). They measured as follows: 55.3 × 42.0 mm, 53.3 × 41.9 mm, 51.5 × 41.7 mm, and 54.8 × 42.8 mm.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight gm	Remarks
M242	M	July 6	–	900	T.:19 mm, had nest with 4 eggs
M243	F	July 6	–	1,116	L.O.:4 mm, had nest with 5 eggs
M413	F	Aug. 17	1	1,027	Had nest with 2 nestlings
M446	M	Aug. 25	1	850	Nestling young of M449
M447	M	Aug. 25	1	830	
M448	F	Aug. 25	2	1,060	
M449	F	Aug. 25	2	1,170	L.O.:1.5 mm, parent of above
M454	M	Aug. 26	2	701	Two of three nestlings of M456, M457
M455	F	Aug. 26	2	978	
M456	F	Aug. 26	2	1,055	Had nest with 3 nestlings
M457	M	Aug. 26	2	789	T.:9 mm
H437	M	Aug. 27	1	844	T.:11 mm, parent of H438, H439, H444
H438	M	Aug. 27	2	821	Barely flying young of H437
H439	M	Aug. 27	2	817	Barely flying
H444	F	Aug. 27	2	1,116	Still on nest
M458	F	Aug. 26	1	850	
M459	M	Aug. 27	2	869	Young of M461
M460	M	Aug. 27	2	839	
M461	F	Aug. 27	2	1,227	L.O.:1 mm, parent of M459, M460
B79	M	Aug. 28	2	779	T.:10 mm, parent of M463,
M463	M	Aug. 28	2	796	nestling
H508	F	Sept. 12	2	1,184	Ovary granular, 6 empty follicles.

Gyrfalcon, *Falco rusticolus obsoletus* Gmelin

A dark falcon, probably of this species, was seen near our camp on June 19, first chasing an Oldsquaw and later flying with a bird similar to itself. Another was noted in early September.

A white-phased Gyrfalcon was seen on the southern coast of King William Island on May 18 chasing a wounded ptarmigan. On our next visit to the island, on August 13, one white and one dark Gyrfalcon at a great height were observed chasing a jaeger. There were nine Gyrfalcons, three white and six dark, in this area, when we returned on September 19. Of seven collected, the gonads of the three smaller ones, presumably males, could not be found.

Five of the Gyrfalcons collected had been feeding on lemmings, but one was observed on September 23 attacking a young King Eider (q.v.).

SPECIMENS COLLECTED
(all from King William Island)

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H528	?	Sept. 19	5	1,269	No gonads visible
H529	?	Sept. 19	5	1,172	" " "
H530	?	Sept. 19	4	1,240	" " "
H531	F	Sept. 19	5	1,770	Skull soft, ovary granular
H532	F	Sept. 19	5	1,740	" " " "
H537	F	Sept. 22	3	1,396	
H538	F	Sept. 22	5	1,925	Skull hard, ovary granular

Peregrine Falcon, *Falco peregrinus anatum* Bonaparte

The Peregrine Falcon is moderately common on the Precambrian country of Adelaide Peninsula. The species probably also nests occasionally on the larger erratic boulders of the till country (Manning, 1948:12), but we found no nests in such situations and recorded only six on the till in June and July. Our pooled records from Falcon Inlet and the Kaleet River region suggest a population of one Peregrine Falcon in 4 square miles of the Precambrian country, or a total summer population for the Peninsula of about 125 adults.

Four nests were found on cliffs in the Precambrian region, one on a small island near Crane Peninsula, two on the Kaleet River, and one at Falcon Inlet, where Fraser (1957: 198) saw three in 1956. Data on nests are summarized below:

Date found	No. of young	Remarks
June 8	–	Female collected, nest re-occupied by Aug. 28 (*see* below)
Aug. 15	3	Nestlings
26	–	Young probably flown
	3	2 flying, one flying well
28	2	1 flying well, 1 may have flown

While attempting to collect a family of Peregrine Falcons on August 28, another Peregrine, apparently an adult male, was observed repeatedly but silently stooping at the male parent of the brood. It is possible that this bird was the mate of the female collected at this nest on June 8, still lingering in the vicinity and still defending the site.

A male Peregrine Falcon collected on June 2 had an irregularly-shaped sternum, which appeared to have been very extensively broken, probably in youth. The consequent deformation had no apparent effect on the bird's power of flight.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H55	F	June 8	5	1,094	L.O.: 15 mm brood patch
H221	M	July 2	3	630	T.: 10 mm
M406	F	Aug. 15	1	850	Nestling young of M409
M407	F	Aug. 15	1	840	
M408	F	Aug. 15	2	790	
M409	M	Aug. 15	1	616	T.: 6 mm
H432	M	Aug. 27	3	612	T.: 6 mm
H433	F	Aug. 27	3	944	Ovary granular
H434	F?	Aug. 27	2	608	Nestling and weakly-flying young of H432 and H433
H435	F	Aug. 27	2	570	
H436	F	Aug. 27	2	586	
H445	M	Aug. 28	1	647	Mate of H446
H446	F	Aug. 28	–	998	
H447	M	Aug. 28	4	629	Weakly-flying young young of H445, H446
H448	F	Aug. 28	4	876	Nestling
M513	F	Sept. 12	4	915	L.O.: 1.5 mm, possibly mate of M409
H509	F	Sept. 13	5	942	L.O.:2 mm

Willow Ptarmigan, *Lagopus lagopus leucopterus* Taverner

Willow Ptarmigan were common near Gladman Point, King William Island, when we arrived on May 16, but were rare on Adelaide Peninsula during the summer. Anderson (1940–41:11) saw Willow Ptarmigan near Point Pechell on August 6, 1855, and M'Clintock (1859: 270, 271) saw several on Montreal Island and on the mainland nearby.

While travelling from McGillivray Bay by dog-team on May 26 and 27, we saw three Willow Ptarmigan on the north coast of Sherman Basin. No more were seen until June 28, when a pair and a single male were found near the head of Red Bay. The only Willow Ptarmigan seen thereafter were a group of three, and a female with a brood of about ten young, near the shore at the head of Barrow Inlet on August 12. This species may nest more commonly in western Adelaide Peninsula, where we saw them in the spring, although none were observed in 15 hours walking in the vicinity of Shelter Creek between September 9 and 11. Only one was seen on the southern coast of King William Island in about 15 hours of walking between September 17 and 25, where they had been fairly numerous between May 16 and 23.

Specimens Collected

Data from a series collected at Gladman Point, King William Island, and on the north coast of Sherman Basin between May 17 and 26, are summarized below.

Males: weight (of 7), 656 to 744 gm (mean 698 gm)
testis (of 3), 11 to 13 mm

Females: weight (of 14), 571 to 725 gm (mean 618 gm)
largest ovum (of 13), 2 to 5 mm

Data from the others (including M564 from Gladman Point) are as follows:

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
M196	F	June 28	5	680	Egg in oviduct, 4 empty follicles
M197	M	June 28	3	640	T.: 8 mm
M393	F	Aug. 12	4	580	With M395
M394	F	Aug. 12	4	620	
M395	F	Aug. 12	4	580	
M396	M	Aug. 12	2	370	Young of M395
M397	M	Aug. 12	2	370	
M398	M?	Aug. 12	2	350	
M399	F?	Aug. 12	2	370	
M564	M	Sept. 23	3	716	Skull soft, full crop weighed 67 gm

Rock Ptarmigan, *Lagopus mutus saturatus* Salomonsen

Rock Ptarmigan from Adelaide Peninsula are referable to *saturatus* but show some intergradation with *rupestris.*

The Rock Ptarmigan is a moderately common breeding bird on Adelaide Peninsula. The first Rock Ptarmigan that we saw on the southern King William Island coast were collected on May 21, although Willow Ptarmigan had been common since our arrival on May 16.

Population and distribution. The resident summer population of Rock Ptarmigan is estimated to be 2,500 adults. The early summer population was over one bird per square mile on the coastal drift (May 29 to June 30, 96 observations in 210½ hours) but apparently dropped rapidly at the end of June and the beginning of July to half this figure (July 1 to August 15, 22 observations in 154 hours, and allowance made for decreasing conspicuousness). A similar disappearance was observed on Banks Island in 1952 (Manning *et al.*, 1956: 55). The density of breeding Rock Ptarmigan inland is probably greatest on the western part of the peninsula, which has a higher proportion of well-drained country than the eastern part.

On September 11 and 12, in 8½ hours' observing in the vicinity of Shelter Creek, 52 Rock Ptarmigan were seen, mainly in small flocks scattered along the coast. On September 13, a flock of about 15 was seen near Falcon Inlet, and on the 15th a similar flock on the east bank of Sherman Inlet opposite DeHaven Island; these were probably autumn migrants. Fifteen of the 17 specimens taken in September were males of mixed age, and the other two were young females.

Breeding. Rock Ptarmigan were common at the eastern end of Sherman Basin on our arrival on May 26. Pairs were frequently seen during the next few days, although a few unpaired birds were in evidence, including a group of three females seen on June 3. On June 7, a male was seen associating with two females, apparently bigamously (and *see* Hanson *et al*; 1956:67). Egg-laying began about June 9 and probably continued until the end of the month (data from specimens). Two broods of fledglings, both flightless, were encountered on August 10. They were accompanied only by hens, but the younger brood was joined by a cock when molested.

SPECIMENS COLLECTED

We collected 78 Rock Ptarmigan during the summer, including two at Gladman Point on May 21. Data from these specimens are summarized below.

May 21 to 31—
- Males: weight (of 15), 504 to 594 gm (mean 534 gm)
  testis (of 15), 12 to 18 mm (mean 15 mm)
- Females: weight (of 5), 491 to 618 gm (mean 533 gm)
  largest ovum (of 6), generally enlarging from 4 to 9 mm

June 9 to July 28—
- Males: weight (of 12), 475 to 589 gm (mean 517 gm)
  fat, grades 1 to 3
  testis, from 13 mm to a maximum of 18 mm on June 22, and decreasing to 9 mm on July 18
- Females: (June 9 to 22): weight (of 4), 516 to 625 gm (mean 576 gm)
  fat, grades 3 and 4
  largest ovum, 23 mm in one, the others had eggs in oviducts

August 8 to 10—
- Males: (2 were accompanying broods): weight (of 5), 520 to 580 gm (mean 538 gm)
  fat, grade 2
- Females: (both accompanying broods): weights (of 2), 450 and 475 gm
  fat, grade 2
- Young: mean weights of 3 and 2 young collected respectively from 2 different broods on August 10 were 50 and 235 gm
  fat, grade 2

September 3 to 13—
- Males: (including adults and young): weight (of 13), 518 to 645 gm (mean 585 gm)
  fat, grade 4
  testis, 5 and 6 mm
- Females: (probably young): weights (of 2), 443 and 443 gm
  fat, grade 3

Sandhill Crane, *Grus canadensis canadensis* (Linnaeus)

Sandhill Cranes are fairly common on Adelaide Peninsula, particularly in areas of broken Precambrian rock. "Brown Cranes" were recorded by King (1836, 2:18) on Montreal Island on August 2, 1835, where a pair, apparently with newly hatched young, succeeded in beating off a terrier which attacked them.

Population and distribution. Sandhill Cranes were particularly numerous in late summer at Falcon Inlet (August 15 to 18, 26 observations in 16 hours) and on the banks of Kaleet River. The summer population was estimated to be 800 adults, of which 750 inhabited the coastal till (June 9 to 30, 37 observations in 132 hours). Only one crane was seen (on July 28) more than four miles from the coast in 60½ hours of observation. Few, if any, of those seen in early summer were migrating farther north. The last Sandhill Cranes were seen on September 6.

Breeding and behaviour. The elaborate courtship dance of this species was watched on May 31 (a single bird) and on June 25 (three pairs and a group of three). A pair seen on June 29 appeared to have a nest nearby. One crane approached by Manning on July 3 ran away, with its wings extended and its body bent low to the ground. Its nest was found, and when Manning walked away, the crane followed him on a parallel course with its neck extended and bent downwards and with its wings closed. The bird made no sound during these displays. A nest with two eggs, found on July 6 and revisited on July 9, was attended by only one parent; on July 14 it was deserted and the eggs were gone. The nest was a mere scrape on the top of a hillock of Precambrian rock in a marsh. One of two young seen with two adults on Crane Peninsula on August 25 was collected; the other escaped by swimming across a lake, a distance of about one-half mile.

Food. A juvenile, seen alone in a marsh at Falcon Inlet on August 17, had hundreds of small black slugs in its gullet.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				kg	
H57	M	June 8	4	4	T.:35 mm, one of pair
B8	F	June 9	–	3.6	Egg in oviduct, one of pair
M203	F	June 29	3	3.2	No empty follicles
H404	?	Aug. 17	1	2.5	No gonads visible, skull soft
H440	?	Aug. 25	1	2.5	No gonads visible, bursa, skull soft

Semipalmated Plover, *Charadrius semipalmatus* Bonaparte

The Semipalmated Plover is an uncommon breeding bird on Adelaide Peninsula, perhaps owing to a scarcity of the low gravel ridges which it favours. Semipalmated Plovers were first seen on June 15 and were regularly observed in the next ten days (June 15 to 25, 20 observations in 60 hours), but only ten were seen during the rest of the summer, the last on August 25. They were common in July along the dry clay banks of a stream entering the east arm of Trefoil Bay (3 seen in an hour on July 8).

Distraction display was noted on July 6 and 12, once by a pair and once by a single bird. On the latter occasion, this display was successful in drawing off our pack-dog.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight gm	Remarks
B52	F	July 6	4	44.5	L.O.: 3 mm, brood patch
B53	M	July 6	4	46.0	T.: 8 mm, mate of B52
B60	F	July 12	3	44.9	L.O.: 2 mm

American Golden Plover, *Pluvialis dominica dominica* (Müller)

American Golden Plovers are abundant and well-distributed breeding birds on Adelaide Peninsula. They were commonly seen inland (July 25 to 28, August 9 and 10, 49 observations in 60½ hours), as well as on the coastal drift (June 6 to July 15, 68 observations in 234½ hours). The resident summer population is estimated to be 6,000 adults.

There was no noticeable migration of this species through the region of our camp. The first individuals were seen on June 6, and the first pair on the 9th. On June 29, one was seen chasing a Glaucous Gull, and distraction displays were noted on July 7 and 18. Flocks of American Golden Plovers, of which at least some were young, were common on the coasts of Sherman Basin in September. The last was seen on September 15.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight gm	Remarks
B6	M	June 6	5	156	T.:15 mm
B7	M	June 6	6	–	T.:10 mm
B39	M	June 22	4	143	T.:7 mm, mate of B40
B40	F	June 22	–	203	L.O.:26 mm
B47	M	July 2	4	152	T.:11 mm
B54	M	July 6	4	137	T.:10 mm, brood patch
B55	F	July 6	4	137	L.O.:2 mm, ova being resorbed
B56	F	July 8	3	156	L.O.:2 mm, with B57
B57	F	July 8	3	142	L.O.:3 mm
B58	F	July 11	3	164	L.O.:4 mm, mate of B59
B59	M	July 11	–	155	T.:10 mm
B87	F	Sept. 3	5	139	Ovary granular, skull soft
B88	–	Sept. 3	5	169	Long bones filled with marrow
B97	F	Sept. 9	4	171	–
B99	F	Sept. 11	6	203	Ovary granular

Black-bellied Plover, *Squatarola squatarola* (Linnaeus)

The Black-bellied Plover was the commonest plover of the region. The spring migrant population near the mouth of Weir Creek is estimated to have been about six birds per square mile (June 14 to 19, 67 observations in 31 hours). The total adult summering population was about 5,000. Black-bellied Plovers were fairly common during the summer near our camp (June 20 to July 31, 72 observations in 215 hours) but nearly three times as common in the interior of the eastern part of the peninsula (July 25 to 29, 34 seen in 34 hours). A pair occupied a gravel terrace near our camp, but in spite of the fact that they were frequently under observation, they never revealed the exact position of their nest. Single juveniles, the last Black-bellied Plovers seen, were collected at Falcon Inlet on September 13 and 14.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
M62	M	June 9	–	199	T.:11 mm, mate of M63
M63	F	June 9	–	196	L.O.:5 mm
B16	M	June 14	–	–	T.:9 mm
B17	F	June 14	–	221	L.O.:13 mm
B100	F	Sept. 13	3	168	Ovary clear
B106	M	Sept. 14	4	177	T.:6.5 mm

Ruddy Turnstone, *Arenaria interpres morinella* (Linnaeus)

A few migrant Ruddy Turnstones were seen in the marshes near the mouth of Weir Creek on June 13 and 14, August 25, and September 8. Eight were seen on July 27 and 28, distributed along about four miles of the Chantrey Inlet coast, between Montreal Island and Elliot Bay. These were probably breeding birds. Three young were observed feeding along the beach at Falcon Inlet on August 18.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
M326	M	July 27	1	–	probably breeding
H306	M	July 27	1	–	

Pectoral Sandpiper, *Erolia melanotos* (Vieillot)

The wide, flat tussocked marshes of Adelaide Peninsula provide an ideal habitat for the Pectoral Sandpiper, which is the most abundant of the sandpipers breeding in the region. Its adult summer population is estimated to be 17,000. Pectoral Sandpipers were much more abundant on the inland marshes (July 25 to 28, 37 seen, of which most, if not all, were females, in 34 hours) than they were on similar habitat near the mouth of Weir Creek (June 17 to July 31, 76 observations in 234½ hours).

The first Pectoral Sandpiper was seen on June 17, and by the next day, pairs had taken up territories in the marshes. A flock of four, of which all were probably males, was seen on July 3. Female parents with broods of four downies were collected on July 14 and 16; in neither case was the male parent in evidence. Pectoral Sandpipers occurred commonly in groups and small flocks during early September. The last ones were seen on September 9.

Specimens Collected

Field No.	Sex	Date	Fat	Weight gm	Remarks
H112	M	June 18	1	93.9	T.:12 mm
H113	F	June 18	3	81.1	Ova and oviduct enlarged
M165	M	June 22	3	96.3	T.:11 mm
M216	F	July 3	4	59.8	L.O.:3 mm, no empty follicles
M217	M	July 3	5	97.5	T.:9 mm, from flock
M234	F	July 6	4	61.0	L.O.:2.5 mm, brood patch
M235	M	July 6	4	96.7	T.: 10 mm
M244	F	July 10	4	64.6	L.O.: 3 mm
M245	F	July 10	4	62.0	L.O.: 2 mm
M255	M	July 14	2	10.4	Small yolk sac, young of M262.
M256	F	July 14	2	8.8	
M257	F	July 14	2	9.5	
M258	M	July 14	2	10.9	
M262	F	July 14	3	58.9	L.O.: 1 mm
M270	F	July 16	4	8.4	
M271	F	July 16	4	8.9	Young of M274
M272	F	July 16	4	8.5	
M273	F?	July 16	4	8.4	
M274	F	July 16	3	56.5	L.O.: 3 mm
M428	M	Aug. 22	1	66.1	T.: 3 mm
H430	M	Aug. 24	2	65.2	T.: 3 mm

White-rumped Sandpiper, *Erolia fuscicollis* (Vieillot)

The White-rumped Sandpiper was an uncommon summer resident of Adelaide Peninsula but was locally abundant on migration. It was commonly associated with the Semipalmated Sandpiper in migrating flocks.

Small groups and pairs were frequently seen in the marshes near the mouth of Weir Creek between June 16 and 20 (28 observations in 23 hours). The White-rumped Sandpiper was rare in the vicinity of our camp during the summer (June 21 to August 19, 16 seen in 216 hours) and was apparently absent from the other parts of the Peninsula that we visited. Probably several of those seen were breeding birds, for a pair with two newly hatched young was found on July 16. The first autumn migrants, about 100 in flocks of approximately 25, were observed on August 20, and 132 others were seen between this date and September 5 (in 35½ hours), mostly in groups of 10 or 15.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
B24	M	June 16	3	37.8	T.: 12 mm
M111	M	June 16	3	44.2	T.: 9 mm
H214	M	July 2	3	40.2	T.: 10 mm
M232	F	July 6	3	43.0	L.O.: 4 mm, brood patch
M279	M	July 16	1	9.0	Small yolk sac, young of M281
M280	M	July 16	1	8.9	
M281	F	July 16	3	37.9	L.O.: 1 mm
H415	F	Aug. 20	2	38.2	From flock
H416	F	Aug. 20	3	37.4	
H417	M	Aug. 20	2	35.9	
H418	F	Aug. 20	2	35.5	
H419	F	Aug. 20	2	34.3	
M431	F	Aug. 22	3	36.4	Ovary clear

Baird's Sandpiper, *Eroïa bairdii* (Coues)

Population and distribution. Baird's Sandpiper is a common breeding bird of Adelaide Peninsula; its resident summer population is estimated to be 15,000 adults, or about eight per square mile on the inland country (July 25 to 28, 31 observations in 34 hours), and about two per square mile within four miles of the coast (June 14 to July 31, 67 observations in 248½ hours). Small flocks were common on the shores of Sherman Basin in the middle of August (August 16 to 24, 64 observations in 27½ hours), and the species was still relatively common until September 9. About 160 sandpipers seen feeding in small flocks on the banks of Kaleet River on August 25 and 26 were not definitely identified, but at least some of them were probably of this species. The last were seen on a small island in Wilmot and Crampton Bay on September 15 and 16.

Breeding. The first were seen on June 11, and almost all observed between this date and June 27 were in pairs. On June 27, a Baird's Sandpiper was disturbed from a nest containing four eggs on a bouldery hillside. Three very young downies were collected with a male on July 14, and another bird seen flying in the vicinity was presumed to be the female parent. The four females collected in early July from small groups did not appear to have bred. They were beginning to moult.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
B9	F	June 11	4	44.0	L.O.: 3.5 mm, one of pair
M113	F	June 17	4	44.3	L.O.: 5 mm
B37	M	June 21	4	37.6	T.: 10 mm
H211	M	July 2	5	41.5	T.: 8 mm
H212	F	July 2	5	47.3	L.O.: 3 mm, being resorbed, no visible empty follicles
H213	F	July 2	5	49.5	L.O.: 2.5 mm, ova pale
M215	M	July 2	4	41.4	T.: 7 mm
H219	F	July 3	4	44.8	L.O.: 2 mm, no visible empty follicles
H220	F	July 3	4	48.0	L.O.: 3 mm, no visible empty follicles
M233	M	July 6	3	40.5	T.: 7 mm
M259	F	July 14	2	7.1	Small yolk sac, young of M263
M260	F	July 14	2	6.1	
M261	M	July 14	2	6.6	
M263	M	July 14	3	38.0	T.: 3.5 mm

Dunlin, *Erolia alpina pacifica* (Coues)

The Dunlin is a rare migrant on the east side of Sherman Basin but perhaps breeds on the east coast and in other parts of Adelaide Peninsula. A pair was seen on June 17, and two were recorded on August 22, all in the marshes near our camp. One was seen on the east side of Adelaide Peninsula about two miles south of Montreal Island on July 27, and a flock of six sandpipers seen that day were believed to be Dunlins.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
B27	F	June 17	4	67.0	L.O.:13 mm, probable mate of M112
M112	M	June 17	3	52.9	T.: 9 mm
M429	F	Aug. 22	3	49.4	Ovary clear

Semipalmated Sandpiper. *Ereunetes pusillus pusillus* (Linnaeus)

Taxonomy. The mean exposed culmen/bill-width ratio of the 17 migrant and breeding Semipalmated Sandpipers from Adelaide Peninsula is 9.3 mm, or well under the limit of 10.5 given by Manning (Manning *et al.*, 1956) for the western or nominate subspecies. The exposed culmen bill-width ratio of the six male and five female adults from Adelaide Peninsula taken between June 16 and 19 is 9.65 ± 0.21 mm (8.3 to 10.8). This is very close to the mean 9.54 mm given by Manning *et al.* (1956:75) for 17 adults from Banks Island and central and eastern Mackenzie district. It suggests, therefore, that the population occupying the territory from Adelaide Peninsula to near the mouth of the Mackenzie River is reasonably homogeneous in bill proportions. The mean bill ratio for 14 specimens from

Alaska, the Mackenzie Delta, and Cape Bathurst was 8.64 mm and for all 31 specimens considered by Manning *et al.* (1956:75) to represent the western race, 9.13 ± 0.12 mm. The mean for 61 adults of the eastern race was 11.84 ± 0.12 mm.

The bill-width measurement is the greatest width of the upper mandible taken at the broadening, a few millimetres from the tip. A small error made in taking this measurement naturally has a large effect on the ratio, and care is therefore necessary to hold the calipers lightly and not compress the bill.

The Semipalmated Sandpiper is an uncommon breeding bird near the mouth of Weir Creek, and none were seen elsewhere on Adelaide Peninsula during the summer.

Migration. The main waves of Semipalmated Sandpipers in the spring and autumn migrations passed through the region of our camp very quickly. On June 16, the first day that the species was identified, 40 were seen in three hours, but during the next three days only 13 were seen in 17 hours of observation. Similarly, the first autumn flocks were seen on August 20, and on that day about 50 were seen in four hours. During the next three days, only 20 were seen in 6½ hours of observation. They were often seen among White-rumped Sandpipers, and occasionally with Baird's Sandpipers. The last seen was on September 5.

Breeding. A nest with three eggs was found in a tussocked marsh on June 29, and a Semipalmated Sandpiper seen on July 16 clearly had a nest or young not far away. Thirteen noted between June 28 and July 11 almost certainly included breeding birds.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
B22	F	June 16	4	23.5	From flock
B23	F	June 16	4	25.3	L.O.:4 mm, from flock
H100	M	June 16	4	24.2	T.:7 mm, from flock
H101	M	June 16	4	26.5	T.:6 mm, from flock
H102	M	June 16	4	23.7	T.:7 mm, from flock
H103	M	June 16	4	25.3	From flock
H104	F	June 16	4	27.8	L.O.:2 mm, from flock
B26	M	June 16	4	29.5	T.:8 mm, from flock
M114	F	June 17	4	25.1	L.O.:2 mm
B33	F	June 19	4	33.6	L.O.:12 mm, mate of B35
B35	M	June 19	3	23.1	T.:8.5 mm
H412	M	Aug. 20	2	24.0	From flock
H413	F	Aug. 20	2	25.0	
H414	F	Aug. 20	2	22.6	
B75	M	Aug. 20	2	22.2	
B76	?	Aug. 20	4	26.0	
M432	F	Aug. 22	3	22.9	Ovary clear

Sanderling, *Crocethia alba* (Pallas)

Small numbers of migrating Sanderlings were observed in the marsh near the mouth of Weir Creek on June 14 and 16 (10 observations), and on the shores of Sherman Basin and on a small island in Wilmot and Crampton Bay between August 22 and September 16 (28 observations). The last seen was a group of six, feeding on the shore near Gladman Point, King William Island, on September 21.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H81	M	June 14	2	47.5	T.:13 mm, from group of 3
H82	F	June 14	3	53.8	L.O.:1.5 mm, from group of 3
M430	M	Aug. 22	3	48.3	T.:2.5 mm

Red Phalarope, *Phalaropus fulicarius* (Linnaeus)

Red Phalaropes are abundant and widespread summer residents of Adelaide Peninsula. The population is estimated to be 20,000, or 5,000 in the coastal region (June 20 to July 31, 125 observations in 217½ hours), and 15,000 on the inland till (July 25 to 29, 47 observations in 34 hours). A flock of 20, and two of 100 Red Phalaropes were seen on June 8. The species was next seen on June 15 in pairs and small groups. They were very common in the marshes near the mouth of Weir Creek between June 15 and 19 (66 seen in 24 hours.) Most of them were believed to be residents congregating to feed, and not resting migrants. An adult and three downies together were collected on July 16, and many seen after that date appeared to have nests or young nearby. On August 8, we saw a young Red Phalarope, about two-thirds grown, apparently alone. Adults were scarce in early August (August 1 to 15, 9 observations in 52 hours), and almost entirely absent thereafter. One was seen on Sherman Inlet on September 15, and two were seen near Gladman Point on September 22.

A female taken on July 2 had lost a foot. The wound had healed completely, and the bird was lying in wet marsh, apparently feeding. It weighed 61.6 gm, and was the heaviest Red Phalarope that we collected.

SPECIMENS COLLECTED

We collected 32 adult Red Phalaropes between June 15 and July 16, and three young ones on the latter date. The data from these are summarized below.

Males: weight (of 13), 43.3 to 53.9 gm (mean 46.5 gm)
fat, grades 1 to 4
testis (of 14), 6 to 15 mm, maximum June 16, minimum July 16
Females: weight (of 18), 44.9 to 61.6 gm (mean 54.5 gm)
fat, grades 3 to 5
ova; June 15 to 19, 2 to 5 mm; June 21 and 22, 10 and 18 mm; 3 empty follicles on July 1; one taken July 5 had largest ovum: 10 mm and no apparent empty follicles; several were apparently not breeding
Young: July 16, weights (of 3) 6.2, 6.2, and 6.1 gm
fat, grade 2

Pomarine Jaeger, *Stercorarius pomarinus* (Temminck)

The Pomarine Jaeger, unlike the other two jaegers, was seen very infrequently on Adelaide Peninsula in 1957, although Fraser (1957:198) considered it commoner than the Parasitic Jaeger in 1956. We recorded only three individuals, on June 10, 21, and 25, respectively.

Parasitic Jaeger, *Stercorarius parasiticus* (Linnaeus)

The Parasitic Jaeger is a common breeding bird of Adelaide Peninsula, having a summer population of about 4,500 adults.

Population and distribution. Parasitic Jaegers attained a population density of about one per square mile (June 20 to July 31, 52 observations in 201 hours) on the coastal till country in the vicinity of our camp. They were more than twice as common on the inland till between Sherman Basin and Barrow Inlet (July 25 to 29, August 9 and 10, 42 seen in 60½ hours) and along the coast of Chantrey Inlet between Montreal Island and Elliot Bay (July 27 and 28, 10 seen in 6 hours). However, none were seen at Falcon Inlet (August 15 to 17, September 13 and 14, 29½ hours) nor in the region of Kaleet River (August 25 to 28, 29 hours), although on a walk to this river from our summer camp (July 7 to 9, 16½ hours), five Parasitic Jaegers were seen hunting over a broad meadow at the head of the east arm of Trefoil Bay, near the edge of the Precambrian country. The species was uncommon in the vicinity of Shelter Creek between September 9 and 11 (two seen in 17 hours).

Migration and breeding. Two small flocks of jaegers tentatively identified as this species were seen near our camp on June 11 and 12, but we did not begin to see Parasitic Jaegers regularly until June 19. A nest was found on July 16; one of the two eggs in it was pipped. It hatched next day at our camp. The other egg was rotten, but was still being incubated on July 21, when the adults were collected. Pairs, several apparently with nests or young, were noted frequently between July 23 and 29. Three Parasitic Jaegers, of which two were young, at Wilmot and Crampton Bay on September 16, were the last noted in the region.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight gm	Remarks
M164	F	June 22	3	514	L.O.: 5 mm, no empty follicles
H294	F	July 21	4	–	L.O.: 3 mm, brood patch
H295	M	July 21	4	–	T.: 6 mm, mate of H294
H313	F	July 30	1	72.2	Hatched on 17th and kept captive, young of H294, H295
B95	F	Sept. 7	6	655	Young of B96, flying well
B96	F	Sept. 7	3	480	Ovary granular

Long-tailed Jaeger, *Stercorarius longicaudus* Vieillot

The Long-tailed Jaeger is an abundant species on Adelaide Peninsula, and its summer population is estimated to be 4,000 adults.

Population and distribution. The distribution of the Long-tailed Jaeger on Adelaide Peninsula is similar to that of the Parasitic Jaeger. It attains its maximum density, over two per square mile, on the inland till on the eastern side of the Peninsula (July 25 to 29 and August 9 and 10, 48 seen in 60½ hours) and along the eastern coast (July 27 and 28, 10 seen in 6 hours). Long-tailed Jaegers were common in the country lying between our camp and Kaleet River (July 7 to 9, 10 seen in 16½ hours) but virtually absent from the Precambrian country at the mouth of this river and around Falcon Inlet (August 15 to September 14, one seen in 64½ hours).

Migration and breeding. Long-tailed Jaegers, the first of which was noted on June 13, occurred in the region of our camp until June 25, at an average density of between two and three per square mile (60 seen in 67 hours). This high spring population was probably caused by a concentration of birds whose nesting had been delayed by the late spring. On July 12 a single bird was found defending a nest, an unlined scrape containing two eggs. The next evening both parents were attending the nest. On July 18 there was no apparent change in the eggs, but on July 21 the site was abandoned and the eggs had vanished. The last Long-tailed Jaegers observed were two in the marshes near our summer camp on September 3.

Food. Identifiable lemming remains were found in six stomachs, remains of insects or spiders in six, and remains of nestling passerines in two.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
M93	F	June 13	–	373	L.O.:5 mm
B42	F	June 27	4	342	At least 2 empty follicles, brood patch
B43	M	June 27	4	319	T.: 17 mm, brood patch, mate of B 42
M212	F	June 28	2	362	2 empty follicles
M213	M	June 28	4	301	T.:12 mm
M214	M	June 28	4	303	T.:13 mm
M221	F	July 3	4	340	L.O.:5 mm, 1 empty follicle
M222	M	July 3	4	317	T.:10 mm
M223	M	July 3	3	302	T.:11 mm
B50	M	July 5	4	316	T.:10 mm
H227	F	July 6	3	336	L.O.:4 mm, no empty follicles visible
H228	M	July 6	1	271	T.:13 mm, mate of H227
M246	F	July 10	3	348	L.O.:5 mm
M247	M	July 10	3	265	T.:9 mm
M248	M	July 10	3	282	T.:8 mm
M250	F	July 12	3	292	L.O.:13 mm, next ovum: 3 mm
M251	M	July 12	4	292	T.:8 mm
M252	F	July 12	3	316	L.O.:6 mm, empty follicles

Glaucous Gull, *Larus hyperboreus hyperboreus* Gunnerus

The Glaucous Gull is abundant and widespread on Adelaide Peninsula and was the only *Larus* gull found breeding in the region. Its summer population was estimated to be 2,000 adults.

Population and distribution. Glaucous Gulls were common in all parts of the region visited during the summer, with an average density of about one per square mile (June 4 to September 14, about 500 adults seen in 620 hours), except in that part of the till area lying more than four miles from the sea, where their density was estimated to be about six Glaucous Gulls in 10 square miles (July 25 to 29, and August 9 and 10, 38 seen in 60½ hours).

Arrival and nesting. Two gulls, not specifically identified, were seen near our camp on May 30. Glaucous Gulls were first identified on June 4 and were seen singly and in couples on almost every walk thereafter. On June 12, a pair occupied a nest site on an erratic boulder near the mouth of Weir Creek, and on the 16th, pairs and singles were exhibiting defensive behaviour along the river, including birds occupying nest sites on islets in Tern Lake. The lake ice, though rotten near shore, was still thick and dry in the middle. A few Glaucous Gulls were attracted to our rubbish dump in early June, but most of them were seen flying over the land and were probably searching for lemmings, for remains of this animal were identified in the stomachs of two taken on June 17.

Nest-site. Only three pairs nested successfully on the islets in Tern Lake, probably because a number of adults were collected from the vicinity, for a large island there had several old nests on it, and about 12 Glaucous Gulls frequently seen around this island had disappeared by the time it was reached, with the aid of a rubber boat, on July 19. These islands, had we not disturbed the birds, would probably have held the largest breeding colony of Glaucous Gulls in the region we examined. During the summer, a total of four pairs of Glaucous Gulls were found nesting solitarily on rocks and islets on Sherman Basin, and 16 on islets and rocks in lakes (including three in Tern Lake). In addition to these, two colonies were found, one of about 15 birds on a flat islet in a lake on an island just north of the end of Crane Peninsula, and the other of about ten birds on a hummock of rock near the southern entrance to Falcon Inlet.

Hatching and development of young. Of the three clutches of eggs (each of 3) in islets in Tern Lake, visited on July 19, one had apparently hatched. Of one of the remaining clutches, an egg was pipped on July 23, another egg hatched within the next two days, and one egg was rotten. When the last clutch was examined on July 31, two eggs were pipped and the other had disappeared. One egg hatched the next day at our camp, and the other on about August 3. Downy young were seen on August 15 and 18 at Falcon Inlet, and a flying juvenile was seen at Weir Creek on September 8. Four flying young were disturbed from the colony at Falcon Inlet on September 12, but two young seen on the 14th were still unable to fly from their nesting-lake, although ice was making rapidly at its edges.

At M'Clintock Bay, on King William Island, about 35 Glaucous Gulls, of which only about one-third were young, were seen feeding on garbage on September 21, but most of these had left by the 23rd.

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H99	M	June 15	–	1,700	
H105	M	June 17	3	1,925	T.:16 mm
H106	F	June 17	3	1,400	L.O.:3 mm
H126	M	June 18	–	1,750	T.:25 mm
H145	M	June 21	3	1,900	T.:25 mm
H146	F	June 21	3	1,700	Egg in oviduct, 4 empty follicles
H147	M	June 21	3	1,925	T.:19 mm
M161	M	June 22	4	1,850	T.:20 mm
M162	F	June 22	3	1,400	L.O.:5 mm, no empty follicles visible
H179	F	June 25	–	1,550	Empty follicles
H209	M	July 1	2	1,800	T.:17 mm
B45	F	June 29	3	–	Empty follicles
M253	M	July 12	3	–	T.: 17 mm
M254	M	July 12	3	–	T.: 18 mm
M351	–	Aug. 1	2	187	About 6 days old, young of M352, M353
B66	F	Aug. 2	–	75.2	Hatched July 31, yolk sac 4.3 gm
M352	F	July 31	2	1,550	L.O.: 3 mm
M353	M	July 31	–	1,780	T.:10 mm
M369	M	Aug. 3	–	80.4	Hatched Aug. 3, yolk sac 4.4 gm, young of M370, M371
M370	F	Aug. 3	–	1,420	L.O.:3 mm
M371	M	Aug. 3	–	1,680	T.:8 mm
H408	F	Aug. 18	3	1,500	L.O.:4 mm
H409	F	Aug. 18	4	1,600	L.O.:3 mm
M441	F	Aug. 22?	2	1,400	L.O.:1 mm
M495	M	Sept. 3	3	1,550	T.:8 mm
H505	F	Sept. 12	4	1,297	Juv.
H506	M	Sept. 12	3	1,461	Juv.
H507	F	Sept. 12	3	1,102	Juv.
H514	M	Sept. 14	3	1,740	T.:7 mm
H515	F	Sept. 14	4	1,500	L.O.:1 mm
H516	F	Sept. 14	2	1,130	Young of H514, H515

Thayer's Gull, *Larus thayeri* Brooks

As has been shown (Salomonsen, 1950–51; *II*, 320, Manning *et al.*, 1956: 97), Thayer's Gull must be considered specifically distinct from the American Herring Gull. It is probably more closely allied to the Iceland Gull and Kumlien's Gull, but, as the argument for its conspecificity with these forms has not yet been published (Macpherson, 1957), it seems best to treat of it here under its original name.

Thayer's Gulls are rare wanderers to Adelaide Peninsula. Those seen included birds of three classes: non-breeding immatures, adults in July that had probably lost their nests, and flying young in August and September. The probable reason for the absence of this species as a breeding bird from the region of Queen Maud Gulf, King William Island, and Adelaide Peninsula is the lack of suitable cliffs on which to form their rookeries. Thayer's Gulls nest along the arctic coast east to northern

Foxe Basin, and it might be expected that the scene of our work would lie on the migration route of these gulls between their colonies and Behring Strait. However, we observed no such migration.

An immature was collected on June 22. Between July 2 and 16, eight Thayer's Gulls were identified, including four that were seen wheeling with a Glaucous Gull at a great height near our camp on July 9. Juveniles were seen on August 23 and September 16, the former in the vicinity of our summer camp, and the latter on King William Island.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H149	M	June 22	4	1,195	T.:7 mm, immature
M224	M	July 5	1	900	T.:12 mm, adult
B107	M	Sept. 19	4	917	T.:5 mm, immature

Herring Gull, *Larus argentatus smithsonianus* Coues

The Herring Gull is a wanderer to Adelaide Peninsula. We observed no evidence of breeding, and Fraser's (1957: 198) record of large gulls nesting on islands in inlets may be assumed to refer exclusively to the Glaucous Gull.

Between June 6 and 29, ten Herring Gulls were seen (including three together, not definitely identified), and one of these collected on June 6 was apparently an adult female. A gull, believed to be this species, was seen on July 16, and a near-adult Herring Gull, perhaps the same bird, was collected two days later. A flying juvenal was seen alone at Weir Creek on September 6.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
H52	F	June 6	4	981	L.O.:9 mm
H266	M	July 18	–	–	–

Sabine's Gull, *Xema sabini sabini* (Sabine)

Sabine's Gull was common near our summer camp in late June and early July but was otherwise distinctly rare on Adelaide Peninsula (*pace* Fraser, 1957: 198). The species probably breeds sparingly in the region, but no definite evidence of this was secured.

A flock of about 15 Sabine's Gulls was seen on June 16, and for the next 20 days the species was locally abundant in the vicinity of our camp (June 16 to July 5, 59 seen in 107½ hours). A female taken on July 2 was in breeding condition, but it is doubtful that she would have nested so late in the season.

The nesting of this species was perhaps entirely prevented by the delayed advance of the thaw, although the actions of two seen together on July 25 suggested that they had a nest. These were the only ones seen inland (July 25 to 29, and August 9 to 10, 60½ hours). Two Sabine's Gulls were seen between August 15 and 17 at Falcon Inlet (in 14 hours). None were noted in the coastal region between July 25 and August 10, only seven were seen between August 10 and 20, and none were noted thereafter.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
B30	F	June 18	3	160	L.O.:5 mm
H215	F	July 2	3	173	L.O.:3 mm from flock of 6
H216	F	July 2	3	177	L.O.:17 mm
H217	M	July 2	3	175	T.:10 mm
M218	M	July 3	2	180	T.:14 mm

Arctic Tern, *Sterna paradisaea* Pontoppidan

The Arctic Tern is a fairly abundant and evenly distributed bird on Adelaide Peninsula, and its summer population is estimated to be 4,500 adults. It was noted breeding on an islet in Tern Lake.

The first Arctic Terns seen near the mouth of Weir Creek were four in a flock on June 16. They were common in single and small groups in this region throughout the summer, and flocks of up to 20 birds were seen during the latter half of June. The density previous to the departure of these flocks was about five in 2 square miles (June 16 to 30, 106 observations in 88 hours) and afterwards about two per square mile (July 1 to September 7, 197 observations in 194½ hours). Their density inland was half this (July 25 to August 10, 28 observations in 56½ hours) and along the east coast of Adelaide Peninsula (July 27 and 28, 3 observations in 6 hours), although none were seen on the plain west of Red Bay (June 29, 8 hours) or on a walk from our summer camp to Kaleet River (July 7 to 9, 16½ hours). Arctic Terns were also less abundant at Kaleet River and Falcon Inlet (August 15 to 26, 5 seen in 27 hours). The last was seen on September 7.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Remarks
				gm	
B32	M	June 19	4	113	T.:10 mm
M299	F?	July 21	4	17.3	Downy young
M300	M	July 21	2	94.8	T.:6 mm
M301	M	July 21	2	102.5	T.:7 mm
M302	M	July 21	2	99.3	T.:4 mm
M303	M	July 21	2	108.4	T.:4 mm
M311	–	July 22	2	11.5	Downy, egg tooth, yolk sac
M312	–	July 22	2	11.5	Downy, egg tooth, yolk sac
M321	M	July 24	1	10.1	8-hr. old, egg tooth, yolk sac, 1.1 gm

Black Guillemot, *Cepphus grylle* (Linnaeus)

A single Black Guillemot was identified simultaneously by both of us at the entrance to Sherman Inlet on August 15.

Snowy Owl, *Nyctea scandiaca* (Linnaeus)

Although both species of lemming were reasonably abundant on Adelaide Peninsula during the summer, the Snowy Owl was extremely scarce and was observed only during the migration periods, the first on June 12 near our summer camp, and the second and last on September 15, on the shore of Wilmot and Crampton Bay. Three Snowy Owls, of which one was dark and no doubt a juvenal, were seen near M'Clintock Bay on September 21 and 23.

Short-eared Owl, *Asio flammeus* (Pontoppidan)

Reverend Frans Van de Velde, O.M.I., the resident missionary at Pelly Bay, has informed us that a bird known to the Eskimos of Pelly Bay as the "Masilik," and identified by them from a drawing as the Short-eared Owl, is of sporadic occurrence in the region. Two have been killed at Pelly Bay in the last twenty-five years and one on Adelaide Peninsula in the late 1920's.

Horned Lark, *Eremophila alpestris hoyti* (Bishop)

The Horned Lark is an abundant summer resident of Adelaide Peninsula. The summer population is estimated to be 40,000 adults.

Population and distribution. The first Horned Larks arrived in the region of our summer camp on June 4. The density within the area covered on daily walks from our summer camp was about 14 per square mile in June (June 14 to 30, 173 observations in 99 hours). It increased to 20 per square mile as the summer progressed (July 1 to August 15, 340 observations in 138 hours), and the autumn population, including young, was about 42 per square mile (August 16 to September 10, 272 observations in 53½ hours). Horned Larks occurred in similar densities on the flat country west of the mouth of Red Bay (June 29, 15 seen in 8 hours) and also in the country traversed on a walk to Kaleet River from our summer camp (July 7 to 9, 26 seen in 16½ hours). They were scarcer in the country covered by our first trip across the peninsula, the density there being about eight per square mile (July 25 to 29, 15 seen in 14½ hours), and on the east coast of the Peninsula between Montreal Island and Elliot Bay, where their density was about six per square mile (July 27 and 28, 11 seen in 16 hours). There were about nine Horned Larks per square mile along the route of our second crossing (August 9 and 10, 32 seen in 26½ hours). On our first visit to Falcon Inlet the density of Horned Larks, including flocks, was about 30 per square mile (August 15 to 17, 52 seen in 14 hours), but there were none when we were next there, on September 13. The species was scarce on the banks of Kaleet River and the rocky country at its mouth between August 25 and 28 (6 seen in 27 hours), but in the vicinity of Shelter Creek, between September 9 and 11, the recording of a flock of about 100 Horned Larks raised the calculated density to about 48 per square mile (105 seen in 17 hours). The last seen was a crippled bird, collected on King William Island on September 23.

Breeding. Most of the Horned Larks seen between June 4 and 14 were males, but after the latter date the sexes were probably about equal. On June 25, two male Horned Larks were observed performing flights similar to those of the Water Pipit. They ascended until almost out of sight in a series of upward glides with "flutters" between them. For a few days in late June and early July, the sexes were rarely seen together, as they were before and after this period. An adult Horned Lark was seen carrying insects on July 8, and the first flying young were seen on July 10 (1) and July 21 (2).

Specimens Collected

We collected 68 Horned Larks on Adelaide Peninsula during the summer. Data from these specimens are summarized below.

June 4 to July 5—
Males: weight (of 15), 36.4 to 41.8 gm (mean 38.7 gm)
fat, grades 1 to 3
testis, 6 to 9.5 mm
Females: weight (of 12), 37.0 to 48.2 gm (mean 42.1 gm)
fat, grades 2 to 4
ova, from 1.5 mm on June 4 to 11 mm on June 21, in oviduct on June 25 and 27; apparent non-breeding birds collected later with 1 to 6 mm ova

July 21 to August 4—
Juveniles: (both sexes): weight (of 12), 31.4 to 42.7 gm (mean 37.1 gm)
fat, grades 1 to 3

August 23 to September 11—
Males: weight (of 13), 39.2 to 50.8 gm (mean 43.4 gm)
fat, grades 2 to 5
Females: weight (of 15), 35.6 to 47.6 gm (mean 41.2 gm)
fat, grades 1 to 5

Common Raven, *Corvus corax principalis* Ridgway

A Common Raven was heard on May 29 near our summer camp, and on both September 13 and 15 a pair was seen flying near the head of Falcon Inlet.

Water Pipit, *Anthus spinoletta rubescens* (Tunstall)

The Water Pipit is a moderately common summer resident in the Precambrian country and in those parts of the till country in which boulder heaps occur. The summer population is estimated to be 3,000 adults. Water Pipits were most common in the region of our summer camp, on the seaward slopes of the hills and ridges where heaps of weathered-out boulders provided crevices suitable for nest-sites. Their density was about three per square mile in this region (June 14 to July 31, 64 observations in 235 hours). Water Pipits were scarce or absent inland and along the east coast of the Peninsula (July 25 to 29, and August 9 to 10, 3 observations in 60½ hours), on the west side of Kaleet River (August 27 and 28, none seen in 17 hours), and in the vicinity of Shelter Creek (September 9 to 11, none seen in 17 hours), but were fairly common between our camp and Kaleet River (July 7 to 9, 14 observations in 16½ hours) and in the vicinity of Falcon Inlet (August 15 to 17, 13 observations in 14 hours).

Migration and breeding. Two male Water Pipits were seen on June 9, but the species was not noted again until June 14 and did not become common until after June 20. Laying females were collected on June 26 and July 1, and the first flying young on August 3. The last Water Pipits were seen at Falcon Inlet and Sherman Inlet on September 14 and 15.

SPECIMENS COLLECTED

We collected 34 Water Pipits on Adelaide Peninsula during the summer. Data from these specimens are summarized below.

June 21 to July 1—
- Males: weight (of 9), 19.5 to 23.1 gm (mean 21.3 gm)
  - fat, grades 1 to 3
  - testis, between 8 and 11 mm
- Females: weight (of 5), 22.9 to 27.4 gm (mean 25.0 gm)
  - fat, grades 3 and 4
  - ova, 5 and 10 mm on June 21, in oviduct June 26 and July 1

September 1 to 15—
- Males (all ages): weights (of 4), 23.5, 22.6, 22.6, 23.6 gm
  - fat, grade 4
- Females (all ages): weights (of 3), 22.7, 23.0, 22.9 gm
  - fat, grade 4
- Sex ? (all ages): weights (of 4) 22.7, 27.0, 22.9, 24.4
  - fat, grades 4 and 5

Hoary Redpoll, *Acanthis hornemanni exilipes* (Coues)

The Hoary Redpoll is rare on Adelaide Peninsula but probably breeds in a few favoured places. On June 25, a singing male was collected near our camp, and three were seen nearby on June 27. On July 9, a female that was thought to be incubating was collected. Five or six Hoary Redpolls, perhaps a family, were seen loosely attached to a flock of Lapland Longspurs on the west side of Kaleet River mouth on August 27. Two small flocks of redpolls were seen on September 23 on King William Island. They were probably Hoary Redpolls, as a bird of this species was collected next day in the same region.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight gm	Remarks
H167...............	M	June 25	3	14.0	T.: 6 mm
H230...............	F	July 9	2	–	L.O.: 1 mm, brood patch
H430...............	F	Aug. 27	3	13.7	Skull not ossified
H431...............	M	Aug. 27	3	12.8	Skull not ossified
M574...............	M	Sept. 24	5	21.4	T.: 5 mm, skull not ossified

Lapland Longspur, *Calcarius lapponicus lapponicus* (Linnaeus)

The Lapland Longspur is a very abundant breeding bird on Adelaide Peninsula. Its summer resident population is estimated to be 200,000.

Population and distribution. In the first 12 days after their arrival, the density of Lapland Longspurs near the mouth of Weir Creek was about

38 per square mile (June 6 to 18, 344 seen in 89½ hours), of which most appeared to be males. From June 19 to July 31 the average density was nearly double this figure, or 70 per square mile (1,418 seen in 209 hours), and the proportion of males to females became lower. The Lapland Longspur population of the low country lying west of the mouth of Red Bay was about 125 per square mile on June 29 (100 seen in 8 hours), and in the country between our camp and Kaleet River about 200 per square mile between July 7 and 9 (310 seen in 16½ hours). Observations made on our two walks overland gave a density of 82 per square mile over the route taken on our return trip of July 25 to 29 (300 seen in 45½ hours), and a density of 38 per square mile for the later trip of August 9 and 10 (100 seen in 26½ hours); the lower density of the latter no doubt reflects the smaller proportion of cotton-grass marsh covered on this trip. The presence of flocks of between 25 and 80 was responsible for the high densities recorded on the west side of Kaleet River (250 per square mile; August 27 and 28, 425 seen in 17 hours), in the region of our camp (338 per square mile; September 1 to 7, 880 seen in 26 hours), and in the vicinity of Shelter Creek (185 per square mile; September 9 to 11, 315 seen in 17 hours). Few Lapland Longspurs remained on September 13, when the density of the species around Falcon Inlet was about 20 per square mile (12 seen in 6½ hours).

Migration and breeding. The first Lapland Longspurs were seen on June 6. The flocks had disappeared by June 19, and pairs were abundant. Laying females were collected on June 25 and 27, and a juvenile, able to fly only a few feet, was seen on July 18 (and caught by our pack-dog). Flocks became common during August. The last Lapland Longspurs were seen on September 13.

SPECIMENS COLLECTED

The data from most of our series of 78 Lapland Longspurs from Adelaide Peninsula are summarized below.

June 6 to 27—
  Males: weight (of 22), 25.4 to 31.0 gm (mean 28.1 gm)
    fat, grades 1 to 4
    testis, between 7 and 11 mm
  Females: weight (of 15), 24.8 to 33.4 gm (mean 28.4 gm)
    fat, grades 1 to 4
    ova, 1 mm on June 6, in oviduct June 25 and 27, empty follicles June 25 and 27

July 18 to August 31—
  Young: (both sexes): weight (of 11), 16.6 to 30.1 gm

September 1 to 5—
  Males: (all ages): weight (of 16), 21.9 to 35.7 gm (mean 29.9 gm)
    fat, grades 3 to 5
  Females: (all ages): weight (of 6), 27.3 to 32.0 gm (mean 29.3 gm)
    fat, grades 4 and 5

Snow Bunting, *Plectrophenax nivalis nivalis* (Linnaeus)

The Snow Bunting is moderately common on the Precambrian country of Adelaide Peninsula, but elsewhere somewhat scarce. The estimated resident summer population is 3,500 adults.

Population and distribution. A few Snow Buntings had reached Adelaide Peninsula before we began observations on May 29, but the species did not become common until May 31. Between this date and June 15, pairs and small flocks were plentiful in the neighbourhood of our camp, with a calculated density of about 35 per square mile (365 observations in 108 hours). Snow Buntings became rarer after this date; the average density between June 16 and 30 was about 14 per square mile (122 observations in 88 hours), and between July 1 and 31 about seven per square mile (44 observations in 121½ hours). Some of this decline was no doubt due to decreasing conspicuousness, progressive dispersion to regions where suitable nest-sites were more abundant, and to local depletion caused by collecting. However, the summer Snow Bunting population appeared to be low over all parts of the region examined, and it is possible that this general scarcity was caused by the delayed spring. The density of Snow Buntings in the country covered between our camp and Kaleet River was about six per square mile (July 7 to 9, 10 seen in 16½ hours), and along the east coast south of Montreal Island about five per square mile (July 27 and 28, three seen in 6 hours). No Snow Buntings were noted on our July walks across the eastern part of the Peninsula (July 25 to 29, 32 hours), but three were seen inland on our August crossing (August 9 and 10, 26½ hours). A population of about 18 per square mile, including young, inhabited the region of Falcon Inlet between August 15 and 17 (25 seen in 14 hours). Populations recorded after that date included migrants in small groups and flocks. Between August 27 and 28, the peninsula west of Kaleet River mouth had a population of about 40 Snow Buntings per square mile (65 seen in 17 hours). The region of our summer camp had a population of about 30 Snow Buntings per square mile in the first week of September (69 observations in 24 hours), and a population of about 75 per square mile inhabited the vicinity of Shelter Creek between September 9 and 11 (125 seen in 17 hours). Many had probably left the region by September 14, when the population at Falcon Inlet was about five per square mile (6 seen in 12 hours). Migrant Snow Buntings were still common on King William Island on September 23.

Breeding. Most of the Snow Buntings seen after June 16 were paired, and six females either laying or with brood patches were collected between June 19 and 26. The first flying young was collected on July 27.

SPECIMENS COLLECTED

May 29 to June 30—
Males: weight (of 23), 31.4 to 46.1 gm (mean 37.0 gm)
fat, grades 1 to 5 (not recorded in first week of June)
testis, 5 to 12 mm
Females: weight (of 18), 31.4 to 38.6 gm (mean 35.2 gm)
fat, grades 1 to 3 (not recorded in first week of June)
ova, 1.5 to 10 mm, empty follicles recorded on June 25 and 26

July 27 to August 7—
Young: (both sexes): weights (of 4), 31.3, 38.1, 35.5, 34.5 gm

September 2 to 11—
Males: (all young): weight (of 8), 34.6 to 40.8 gm (mean 38.2 gm)
fat, grades 2 to 4
Females: (all young): weights (of 5), 35.0, 35.6, 33.4, 35.6, 35.0 gm
fat, grades 1 to 4

MAMMALS

Twelve species of mammals are known from Adelaide Peninsula, and one, the Polar Bear, has been recorded a few miles from the northern coast. Nine species were seen or collected in 1957, the probable tracks of another seen, and the other two, Bowhead Whale and Musk-ox, are mentioned in the accounts of previous visitors. Other species that probably occur occasionally on Adelaide Peninsula are the Red Fox, Barren-ground Grizzly, Wolverine, and Cinereus Shrew.

Our lemming trap-nights and catches are summarized in Table 1. Some of the data secured from lemming specimens are summarized in the text, but time has not permitted an adequate treatment of measurements, and these have been left for later comparative studies.

TABLE 1. TRAP-NIGHTS AND LEMMING CATCHES IN 1957.

Period	Trap-Nights[1]		Catch		Remarks
	On Marsh	On Hillsides	Number of *Lemmus*	Number of *Discrostonyx*	
June 12 to 15.........	129	–	51	–	At runs in snow
	–	27	3	–	At runs in vegetation and at burrows
June 16 to 21.........	–	95	6	14	At runs in vegetation and at burrows
June 22 to July 4......	–	342	9	24	Many traps in unproductive habitats
July 5 to 16..........	11	–	5	–	– – – –
	–	315	2	4	Not carefully tended
July 17 to 24.........	133	114	28	4	Catches not separable in our notes
July 25 to 27.........	4	–	3	–	At our camps on walk
	–	14	–	1	At our camps on walk
July 30 to Aug. 5.....	37	–	19	–	Intensive trapping period
	–	241	1	60	Intensive trapping period
Aug. 13 and 14.......	–	24	–	8	At Gladman Point, King William Island
Aug. 17..............	3	3	2	–	At Falcon Inlet
Aug. 19 to Sept. 7....	170	157	44	4	Catches not separable, *Dicrostonyx* scarcer
Sept. 8 to 11..........	81	20	1	2	At Shelter Creek, mainly on river-banks
Sept. 13 and 14.......	27	–	1	–	At Falcon Inlet, in grassy places
Sept. 16 to 24.........	249	261	7	65	In marshes and on gravel beaches. Catches not separable, Gladman Point, King William Island

[1] Near the mouth of Weir Creek unless otherwise specified.

LIST

Arctic Hare, *Lepus arcticus andersoni* Nelson

The Arctic Hare is fairly abundant on the Precambrian regions of Adelaide Peninsula but was rarely encountered on the till, where it is probably confined to the more hilly or more heavily boulder-strewn areas. Arctic Hares were shot on Montreal Island by members of both Anderson's (1940-1: 11) and M'Clintock's (1869: 270) parties.

Population and distribution. On May 27, on a short hunt in the hills near the north-central coast of Sherman Basin, one of our Eskimo drivers shot two Arctic Hares, and two days later we collected two females and a male, together, on the top of a drumlin near the mouth of Weir Creek. A young one was observed on a ridge between our camp and Red Bay on August 5. These were the only Arctic Hares seen on the till region during our stay.

Single Arctic Hares were noted on most of our visits to the broken Precambrian ridges of Crane Peninsula and an adjacent island (June 8, July 12 and 13, August 28). They were common in similar country around Falcon Inlet (August 15 to 17, 4 seen in 14 hours; September 13 and 14, 14 seen in 18½ hours), and also on the peninsula west of the Kaleet River estuary (August 27 and 28, 9 seen in 17 hours), where an adult was collected on August 25.

Breeding. The two female Arctic Hares taken on May 29 were each carrying four fœtuses up to 45 mm in length.

Pelage. Very little summer pelage was visible on the hares seen in May, but the head of one seen on June 8 was dark, and quantities of shed winter hair were noted adhering to the rocks on the same date. Those seen in August were in complete summer pelage, but in September all Arctic Hares seen were practically white.

Arctic Hares in May seemed very confiding in comparison to those seen later in the season, although hares at Falcon Inlet in mid-September were a little tamer than those seen in August, in spite of their extreme conspicuousness.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Total Length	Length of Tail	Length of Hind Foot	Remarks
				kg	mm	mm	mm	
H20........	F	May 27	–	5	610	65	164	– –
H22........	F	May 29	–	4.3	640	80	161	– –
H23........	M	May 29	–	4	610	75	152	T. + epididymis:120 mm
H24........	F	May 29	–	4	600	70	159	– –
H402.......	M	Aug. 15	2	2.3	545	68	142	Juv.
H403.......	F	Aug. 16	2	2.5	560	75	145	Juv.
M445.......	F	Aug. 25	1	4.3	624	80	–	Lactating
H510.......	F	Sept. 13	3	3.4	595	50	160	Juv.
H511.......	F	Sept. 13	2	3.2	575	50	160	Juv.
H512.......	F	Sept. 13	2	3.2	570	55	150	Juv.
M521.......	M	Sept. 14	–	3.9	615	83	152	T. + epididymis:50 mm

Arctic Ground Squirrel, *Spermophilus undulatus parryii* (Richardson)

The Arctic Ground Squirrel is abundant and widespread in the coastal parts of Adelaide Peninsula but surprisingly scarce on apparently suitable country inland between Sherman Basin and Chantrey Inlet. On the drift-covered coastal region, the population density of ground squirrels appears to vary directly with the suitability of the ground for tunnelling. A number of fairly stable, *Elymus*-covered sand-dunes at the head of Red Bay were honeycombed with tunnels and clearly held a large population. The neighbouring vegetation was scanty, and the difficulty of foraging was increased by the presence of a shallow stream and mud-flat along one side of the dunes. Large numbers of Arctic Ground Squirrels inhabited sparsely vegetated, dissected alluvial deposits at the mouths of Squirrel

River and Shelter Creek, and the crevices in falling turf banks along these rivers and others, including Trickle and Kaleet rivers. Ground squirrels were also common on the Precambrian country, where they lived under boulders or in cracks in the country rock.

According to the Eskimos questioned, ground squirrels do not normally occur on King William Island, and we saw no signs of them near Gladman Point, where there was a stream with suitable banks. However, we were informed (verbally) by Mr. L. A. Learmonth that a single Arctic Ground Squirrel spent a summer near the old Hudson's Bay Company post about the year 1925.

A ground squirrel was taken on May 27 by one of our Eskimo drivers on the north-central coast of Sherman Basin, and two were seen on May 29, as well as a few open burrows and numerous tracks in the snow. Ground Squirrels were still active when we left Adelaide Peninsula in mid-September.

Reproduction. A male Arctic Ground Squirrel in breeding condition (testis 18 mm) was collected on May 29, and two of three females taken on May 31 were pregnant. Between this date and June 9, only two of 14 female ground squirrels examined were not pregnant. The usual number of fœtuses or placental scars was six (in five cases out of 13), but the number found varied from five to 12, with a mean of 7.5. On June 22 a female with uterine scars and enlarged mammae was collected, and one taken on July 16 was lactating or had recently lactated. A group of about 12 young were seen at the entrance to a burrow on July 14. Groups of young outside burrows were not seen after July 26, but some young were probably still associating with their mothers on August 12, when an adult female and a young male were trapped at the same burrow.

Behaviour. Arctic Ground Squirrels were most active in early June and seemed to spend less time out of their burrows after the end of that month. In early summer they were usually sitting up when first noticed, sometimes 500 yards away, but this posture was rarely seen after mid-June. The bright reddish fur on its chest makes an alert and suspicious Arctic Ground Squirrel a conspicuous object, and perhaps functions, with the characteristic chatter, as a warning to others of approaching danger.

SPECIMENS COLLECTED

We collected 58 Parry Ground Squirrels on Adelaide Peninsula. Certain of the data from these specimens are summarized below.

May 29 to June 22—	
Males:	weight (of 11), 524 to 960 gm (mean 752.6 gm) fat, grade 1
Females:	weight (of 16), 512 to 809 gm (mean 663.6 gm) fat, grades 1 to 4
July 10 to Aug. 20—	
Adult males:	weights (of 3) 976, 1,000, 1,050 gm fat, grades 2 to 4
Adult females:	weights (of 4), 754, 859, 800, 1,200 gm fat, grade 4
Young:	(both sexes): weight (of 14) 169 to 710 gm:
August 27 to September 11—	
Males:	(all ages): weights (of 4) 890, 810, 957, 958 gm fat, grades 3 to 5
Females:	(all ages): weights (of 5) 581, 723, 856, 814, 700 gm fat, grades 4 and 5

Varying Lemming, *Dicrostonyx groenlandicus kilangmiutak* Anderson and Rand

Distribution and population. No lemming tracks were seen on Gladman Point on King William Island in late May, and none were noticed in the region of our base camp on Adelaide Peninsula until June 12, when the snow on the marshes began to thaw rapidly. Traps were immediately set at the runways (*see* Table 1), but only Brown Lemmings were caught. The first Varying Lemming obtained was found at a fox burrow on June 15. After that, more traps were set on the hillsides, but comparatively few Varying Lemmings were caught until the end of July.

On Adelaide Peninsula we caught Varying Lemmings only on the dry hillsides where arctic white heather, dwarf willow, *Dryas*, and saxifrages were the main components of a sparse flora covering boulder till. None were obtained in the marshes or on the cotton-grass plains where Brown Lemmings were numerous (*see* Table 1). At Gladman Point on the south coast of King William Island, Varying Lemmings were very numerous in September, and we frequently trapped them on Brown Lemming runs in the grassy marshes. At Cambridge Bay, Victoria Island, where we trapped on September 26 and 27 on terrain similar to that at Gladman Point, Varying Lemmings were almost as plentiful as at Gladman Point, but Brown Lemmings were also fairly common in the marshes, and their territory had not been invaded by the Varying Lemmings.

These observations suggest that the habitat and area occupied by Varying Lemmings and Brown Lemmings may differ markedly with the relative abundance of the two species. The point is emphasized by a comparison between our findings on Adelaide Peninsula and those of Bee and Hall (1956, p. 63) who stated, "The collared lemming (*Dicrostonyx*) is so closely associated with the cotton-grass (*Eriophorum*) as to justify employing the name *Eriophorum – Dicrostonyx* Association" also, Manning (Manning and Macpherson, 1958, pp. 26, 34) caught only Varying Lemmings in 1953 in the grassy and peaty valley of the Kellett River in Banks Island.

Sex ratio and productivity. When the four specimens of Varying Lemming caught by hand or picked up at fox burrows were added to those trapped, the numbers of each sex taken during the summer are as follows:

Place	Date	♂♂	♀♀
Adelaide Peninsula	June 15–30	24	15
	July	13	10
	August	20	28
	Sept. 1–13	3	3
Total		60	56
King William Island	Aug. 13–14	3	5
	Sept. 17–25	29	36
Victoria Island	Sept. 26–27	7	4
Total for summer		99	101

The proportion of males to the total catch by months were: June, 61.5 per cent; July, 56.5 per cent; August, 41.0 per cent; September, 47.6 per cent. The variations are not statistically significant (χ^2 for heterogeneity, 4.43, *d.f.* 3, $P > .05$). If the June and July figures are pooled (=59.7 per cent) and compared with the August and September figures (= 44.9 per cent), the difference is nearly significant ($\chi^2 = 3.7$, *d.f.* 1, P just $> .05$). Almost exactly half (49.5 ± 3.5 per cent) of the whole collection are male.

The reproductive condition of 53 of the Adelaide Peninsula females was recorded. Of these, 17 had visible embryos: one had 3 embryos; three, 4; five, 5; three, 6; four, 7; and one, 8 (a mean of 5.5 embryos per pregnant female. At least nine of the non-pregnant females had uterine scars: one had 3; two, 4; one, 5; two, 6; one, 8; and two not counted (a mean of 5.1 scars). Six old scars were also noted in the left uterine horn of one of the pregnant females. It had five embryos in the right horn.

The first female Varying Lemming examined, found dead near a fox den on June 15, had uterine scars. Two females taken on June 20 were not pregnant, but one had an enlarged uterus. The first pregnant female was taken on June 22, and the last on August 4. However, no Varying Lemmings were obtained on Adelaide Peninsula between that date and September 2. Between September 2 and September 13 three non-pregnant females were collected, of which one had uterine scars. None of the 36 female King William Island Varying Lemmings examined was pregnant. Six uterine scars were found in the single King William Island female examined for scars between August 13 and 14. Between September 17 and 25 one female was found to have ten scars, while 22 had no visible scars. None of the four females collected on September 26 and 27 at Cambridge Bay was pregnant.

Pelage change. One of two fresh Varying Lemmings picked up at a fox burrow on June 15 still had winter fur on the rump, flanks, shoulders, and sides of the crown. The ventral lobes of the claws of digits III and IV of the front feet were large, with shallow notches between these and the dorsal lobes. Two other June specimens, one taken on the 19th and one on the 20th, bore ventral lobes equal in length to the dorsal lobes, but the notch between these lobes was deeply incised to a maximum of over 3 mm. The ventral lobe was developing again in pale-pelaged Varying Lemmings taken after mid-September, again divided from the dorsal lobe by a deeply incised notch.

Brown Lemming, *Lemmus trimucronatus trimucronatus* (Richardson)

During the summer of 1957 Brown Lemmings were abundant on Adelaide Peninsula (*see* Table 1), where they inhabited wet sedge marshes and tussocked cotton-grass plains. Brown Lemmings, several of which were caught by our pack dog, were seen in the marshes on many of our walks, and appeared to be well distributed throughout the region. They were common near the mouth of Squirrel River in late July and at Falcon Inlet on July 25, but less so at the latter place on September 13. On the south coast of King William Island, however, this species was scarce.

The Varying Lemming had invaded its habitat and was trapped more commonly in Brown Lemming runs than were the original users, which were identified by their old droppings[1].

As soon as the snow began to thaw on the large marshes near our camp runs, and winter nests of the Brown Lemming were revealed, it was apparent that the species had been abundant during the winter. Traps placed in runways in or under the snow were very productive, but those set in runs on bare patches of frozen marsh or those around which the snow had melted and had left too large an area bare, caught none, perhaps because cover was lacking in such places and because the burrows were filled with ice. By June 16, however, the snow had lost its firmness and was wet and crystalline, and in most places it was lying in several inches of water. These conditions were clearly unfavourable for the Brown Lemming, and many of them retreated to the dryer ridges, which they shared for about a week with the Varying Lemming. Brown Lemmings were seen in the marshes on June 22 but were common for several days afterward on the hillsides and were caught occasionally in this habitat throughout the summer, particularly in frost cracks on the lower slopes.

SEX RATIO AND PRODUCTIVITY

Place	Date	♂♂	♀♀
Adelaide Peninsula	June 12–30	40	28
	July	32	20
	August	17	22
	Sept. 1–15	13	10
Total		102	80
King William Island	Sept. 17–25	3	4
Victoria Island	Sept. 26–27	8	4
Total for summer		113	88

When the above figures are grouped by months the following percentages of males are obtained: June, 58.8: July, 61.5; August, 43.6; September, 57.1.

The variation is not statistically significant (χ^2 for heterogeneity $= 3.32$, *d.f.* 3, $P > .05$), and it may be noted that change in sex ratios between August and September is in the reverse direction to that observed by Bee and Hall (1954, p. 94). Of the whole collection, 56.0 ± 3.5 per cent are males, which is not significantly different from 50 per cent male.

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[1] The droppings of the Brown Lemming are much larger than those of the Varying Lemming and are shed one after the other. Those of the Varying Lemming are retained in the soft-walled rectum and are shed in clusters.

In June there was an apparent hiatus in breeding activity. Our observations suggest that the lemmings stopped breeding well before they were forced to vacate their nests and retreat to higher ground. The first four female Brown Lemmings were trapped on June 12; one of these was lactating and the other had recently lactated. The other two were neither lactating nor pregnant, nor were any of 22 female Brown Lemmings taken between June 13 and June 26. However, a female taken on June 20 had a vaginal plug. Between June 27 and July 24, 16 females were taken with total lengths of over 105 mm (actually, 135 mm – 161 mm). Thirteen of them were pregnant, and three, including one of the pregnant animals, had uterine scars. The three embryos in this female were 6 mm long, and all were in the left horn of the uterus. The scars were in the right.

A total of 14 embryo counts were made. One female had 3 embryos, one, 4, (+ one resorbtion); one, 5; two, 6; three, 7; four, 8; and two, 10; Two non-pregnant females had six and seven uterine scars respectively. The smallest pregnant female had a total length of 109 mm. Only one of six mature (i.e., total length over 105 mm) female Brown Lemmings taken between August 1 and 4 was pregnant, and this was the latest breeding indicated in our observations, although a female trapped on August 4 had some degenerating mammary tissue. None of the 22 mature female Brown Lemmings caught between August 5 and September 15 on Adelaide Peninsula, and none of the four caught on King William Island between September 17 and 25 bore visible embryos, uterine scars, or active mammary tissue. The same applies to four mature females taken at Victoria Island on September 26 and 27.

Bowhead Whale, *Balaena mysticetus* Linnaeus

Living Bowhead Whales have not been recorded in the Adelaide Peninsula area in historic times. The skeleton of a whale, presumably of this species, was found near Point Ogle by Back (1836: 415). The skeletons or bones of whales, of which one was no doubt from a Bowhead Whale (one bone was estimated to weigh at least a ton), have been found on southern and eastern King William Island, two by Amundsen's party (Amundsen, 1908, 1:209, 232) and one by Gibson (1932:404).

Wolf, *Canis lupus hudsonicus* Goldman

The fresh tracks of a wolf or possibly of a stray dog were seen on May 31 near the base of Crane Peninsula. Wolves have not been recorded from King William Island, and Amundsen (1908, 1:102) stated that apparently wolves did not follow the caribou across Simpson Strait.

Arctic Fox, *Alopex lagopus innuitus* (Merriam)

A den was found on May 31 about one mile from our camp. On June 4, young foxes were seen outside the den, apparently playing. Their number was estimated to be between 8 and 10. Between June 7 and July 14, the male parent and nine young were collected, and one young of the litter was believed to be left.

Two dens, about 500 yards apart, were found on a sandy ridge on July 6 and 7. Several young seen at one of them on the former date appeared to be about two weeks younger than those of the litter near our camp. The maximum seen together at the other den was two. The proximity of these two dens, the fact that one or both of them was occasionally untenanted, and the small number of young seen together at either, all suggest that they may have been inhabited by a single family. The last young fox seen at a den was collected at one of these on August 20.

On July 12, a den was found under slabs of rock near Crane Peninsula. Next day, when crossing a ridge overlooking a small marsh about a half mile from the den, Macpherson disturbed a dog-fox and a pup that were apparently hunting together. The pup ran off and hid under a boulder, while the adult circled noisily and began to bark behind Macpherson. After collecting the dog-fox, Macpherson visited the den, where a young fox was found in a trap set that morning. Its frightened squeals brought the vixen to the scene at a run. No more foxes were seen at this den after the two adults and three young were taken. It is possible that these foxes were part of the family usually seen at the dens found on July 6 and 7.

On June 29, on the west side of Red Bay, a female with 19 placental scars and a little mammary tissue was shot while carrying two lemmings. A burrow, obviously recently occupied, although no young were heard in it, was found nearby. It could not be visited again. In the beginning of July, an occupied den was found about four miles north of our camp. It was occupied on August 4 when traps were set at the entrances, but unoccupied next day, although a fox was heard nearby. A young female was caught on August 6, and the traps were then picked up.

Only one den was found in the country covered on our crossing of northeastern Adelaide Peninsula on August 10, and that one appeared to have been unoccupied for at least a year. An unoccupied den was was found near the mouth of Shelter Creek on September 10.

A den, said to have been occupied some ten days previously by several small brown foxes, was pointed out to us on the south coast of King William Island on September 23, and another den, with fresh tracks in the snow at its entrance, was found the same day.

Pelage change. On May 18 a female Arctic Fox in almost perfect winter pelage was taken on the south coast of King William Island. The next one seen, on May 30, had some summer hair visible on the body, and next day one was seen with a dark face. The adult Arctic Foxes from the den near our camp were in very different pelage states. On June 9 and 10, the female had almost completed the change to summer pelage, but the male was largely white, with a dark face, dark legs, and a dark patch on the rump. The male, when collected on June 15, still had a white brush and a considerable amount of white hair on the belly. An adult female from another den, collected on June 29, still had a little winter hair in the brush and along the lower flanks, although three adults taken on July 13 and August 6 were in worn summer pelage. Three out of four young foxes taken between August 20 and September 10 have grey backs and white flanks and bellies; the other, a male collected on August 20, was still quite brown.

Malformation. One of the young foxes (H252, male) collected on July 13 had an unusually short tail and 'clubbed' hind feet. The latter were preserved, and, after cleaning, the third metatarsal was found to measure only 18 mm. The two siblings of this fox, taken on July 13 and 14, were normal, and the third metatarsal of the July 14 specimen (H253, male) measured 37 mm.

SPECIMENS COLLECTED

Field No.	Sex	Date	Fat	Weight	Total Length	Length of Tail	Length of Hind Foot	Remarks
					mm	mm	mm	
M3	F	May 18	–	2.5 kg	780	280	138	From Gladman Point, King William Island
M54	F	June 7	2	543 gm	362	100	68	Young of M101
M101	M	June 15	1	3.7 kg	910	330	158	T.:20 mm
M102	M	June 15	3	1.0 kg	447	128	90	T.:5 mm, back and shoulders unprime, young of M101
				gm				
H109	M	June 16	3	739	415	120	84	Back, shoulders, crown unprime
M123	M	June 17	3	966	462	134	93	T.:6 mm, primeness as H109, young of M101
M126	F	June 18	–	877	474	145	97	Young of M101
H151	F	June 21	1	966	450	130	94	Primeness as in H109, young of M101
H150	F	June 21	1	877	480	140	98	Primeness as in H109, young of M101
M204	F	June 29	–	–	840	156	148	19 placental scars, a little mammary tissue
				kg				
M249	M	July 12	2	1.8	675	236	127	T.:11 mm, young of M101
H249	M	July 13	1	3.6	910	320	158	T.:20 mm, mate of H250
H250	F	July 13	1	3.1	850	285	141	
H251	M	July 13	3	1.8	660	205	120	T.:8 mm, young of H250
H252	M	July 13	3	1.7	600	135	80	T.:8 mm, young of H250
H253	M	July 14	3	1.7	640	215	137	T.:8 mm, young of H250
M269	M	July 14	3	1.8	668	233	122	T.:11 mm, young of M101
M382	F	Aug. 6	1	2.2	755	260	136	– – – –
M424	F	Aug. 20	3	3.0	815	307	138	Prime
H421	M	Aug. 20	3	3.2	855	280	148	T.:12 mm, primeness as in H109
M462	M	Aug. 27	4	3.4	875	320	143	– – – –
H503	F	Sept. 10	4	3.0	840	295	136	– – – –

Polar Bear, *Thalarctos maritimus* (Phipps)

The Polar Bear has apparently not been recorded from Adelaide Peninsula, although it has been seen on the west coast of King William Island in summer (Gilder, 1881:160) and on the south coast in late autumn (Gilder, 1881:198; Amundsen, 1908, 1:247; Burwash, 1931:26).

Ermine, *Mustela erminea arctica* (Merriam)

Ermine were seen on fourteen occasions during the season in those parts of Adelaide Peninsula where fissured rocks or erratic boulders occur in abundance, but never on the inland till deposits.

A family of Ermine, consisting of eight juveniles and the female parent, was found on June 26 living under a large boulder near Weir Creek. A few minutes later an adult male appeared at full gallop, passed within a few feet of Manning and disappeared under the rock. All were secured by June 30. The juveniles were at first unafraid and curious, and the adult female was seen repeatedly pulling them back into the den. Occasionally the juveniles would also pull each other under the rock, and several attempted to rescue one of their number from a trap. Another brood, of seven or eight young (of which all seen were apparently females), was found under a large flat rock on an outcrop on Crane Peninsula on July 12. An adult female was collected near the den on this date, and six of the young were shot next day. No adult male was seen. In addition to these families we collected one apparent adult and nine subadult Ermine, of which three are believed to be immature yearlings.

Remarks. Three adult Ermine were obtained at the two occupied dens mentioned above, and another (H229) was shot on July 7. They all have strongly flexed, raised lambdoidal crests and invisible naso-maxillary and internasal sutures. The baculum of a male collected on June 27 weighs 43 mg. The three collected at dens agree closely in colour. Their upperparts are tawny with a broad band of darker hair beginning at the face and running down the back, and their underparts are pale yellow. The colour of the crowns of these specimens is 00S-5-5°, and that of the sides of the rump 0-8-4°. The upperparts of the male (H229) taken on July 7, although slightly yellower, are almost indistinguishable from those of the nestling young. This animal is assumed to be an adult on skull characters, but it is possibly a subadult (the baculum was lost). The underparts are Y-19-9° in three and Y-19-6° in the other adult, paling in all to white under the lower jaw and on the lips. Extensions of underpart colouring cover the backs (antiplantar surfaces) of the fore-paws of both females to above the wrists, and the backs of the phalanges of the males. The corresponding extension on the hind-paws varies but on the average covers only the backs of the phalanges. The extension of pale fur on the underside of the tail, although difficult to measure accurately in study-skins, is probably between two-thirds and three-quarters of the length of the tail vertebrae.

The 14 young collected at dens were almost of adult size. Their cranial sutures are conspicuous, and some individuals of the brood taken between June 26 and 30 had one or more deciduous teeth; those collected on July 13 had apparently lost their deciduous teeth recently. The bacula of three males weighed 7, 8, and 8 mg, respectively. The upperparts of all are of a warm chocolate-brown colour, 00S-3-4° on the crown, 00S-5-3° on the centre of the back, and 0-7-5° on the sides of the rump. The underparts of those in the first brood and one of those in the second are Y-19-9° in colour, and the underparts of the other five are slightly paler. Three young Ermine, caught far from known dens on July 30 (H319) and on August 12 (H395) and August 17 (M410), are similar in pelage colour to the nestlings taken previously, but the upperparts have a distinct reddish cast. They also appear paler, perhaps because the dark tips of the hairs have been reduced by wear. In one (H319), the facial sutures are fused but visible, and in the others they are open. All lack distinct lambdoidal crests. Four subadults (M469, H486, H462, H546) taken between September 1 and 25 are young of the year, judging from their rounded crania, the visible porosity of their parietals, and apparent vascularization in their naso-maxillary regions. Their facial sutures, however, are very indistinct, and if they are correctly identified as young of the year, it appears that these sutures sometimes fuse appreciably earlier than stated by Hall (1951:25). The female taken on September 1 has fresh, though reddish, pelage, and the two males collected on September 2 and 5 have rather uniform upperparts, about 0-9-3° in colour. The last one taken had nearly completed the change into winter pelage.

Two Ermine taken on August 3 (H361) and August 21 (H420) have flattened, non-porous crania, similar to those in adults, but less well-developed lambdoidal crests and bacula weighing 27 and 23 mg respectively, or a little over half the weight of the 43 mg baculum of a breeding adult taken on June 27, and about twice the weight of the 12 mg baculum of a young Ermine taken on August 17. They appear, therefore, to be intermediate in age between adults and young born in 1957, and to be sexually immature. It is notable that these specimens are apparently completing a late summer change into a more reddish pelage. One (H361, August 3) had very small black spots on the velum, outlining a trefoil-shaped patch between the shoulders, and similar spots in a patch on the rump and patches on the legs. These indications of pelage change correspond to patches of fur closely matching the pelage of the nestlings collected earlier. The colours of the upperparts are 00S-5-5° on the crown, 00S-7-4° on the centre of the back, and 0-8-5° on the sides of the rump. The other specimen (H420, August 21) is very similar in appearance, but the skin was prime and the old brown hair was not so localized but was scattered more generally down the centre of the back. An Ermine (M509) taken on September 10 appears to belong to the same age-class on the evidence of skull characters. Its baculum weighs 28 mg. A patch of brownish fur between the shoulders is still visible, although the pelage is heavily infiltrated with white winter fur. All may be second-year subadults.

TABLE 2. MEASUREMENTS OF *M. erminea*

——	Basilar Length (mm)	M1 Breadth (mm)	
	Mean	Mean	S.E.
5 ad ♂ *M.e. arctica* from Alaska	42.5	4.1	
4 ad. + 4 subad. ♀ *M.e. arctica* from Alaska	35.8	3.3	
1 ad., 10 subad. ♂ *M.e. semplei* from Southampton I.	37.5	3.6	
1 ad., 4 subad. ♀ *M.e. semplei* from Southampton I.	34.2	3.1	
15 ♂ from Adelaide Pen.	38.7	3.82	± .05
12 ♀ from Adelaide Pen.	34.0	3.37	± .05

Table 2 compares Hall's (1951: 432, 433) measurements of *M.e. arctica* and *M.e. semplei* with those of our specimens from Adelaide Peninsula. As it is by no means certain that all Hall's specimens or all ours were full-grown, the efficiency of basilar length is doubtful, but the breadth of M1 will not increase with advancing age. Apparently Adelaide Peninsula is within the zone of integration between *M.e. arctica* and *M.e. semplei*, and quite possibly there is a cline of increasing size across the continent from Hudson Bay to Alaska. Our specimens are tentatively referred to *M.e. arctica*, as the evidence does not warrant any revision of the boundary given by Hall (1951: 95).

Specimens Collected

Field No.	Sex	Date	Fat	Weight	Basilar Length	Total Length	Length of Tail	Length of Hind Foot	Remarks
				gm	mm	mm	mm	mm	
M182..	M	June 27	1	206	41.4	320	90	49	Ad. T.:12 mm
M183..	F	June 26	1	123	35.2	261	71	37	Ad., not lactating
M184..	M	June 26	2	179	38.4	305	81	47	Juv. T.: 7 mm, young of M183
M185..	M	June 27	2	164	38.8	290	72	45	Juv. T.: 6 mm, young of M183
M186..	F	June 26	2	103	34.1	272	70	37	Juv., young of M183
M187..	F	June 26	2	97	34.4	250	62	36	Juv., young of M183
M188..	F	June 26	2	104	34.2	267	71	38	Juv., young of M183
M189..	M	June 27	2	128	37.5	276	72	42	T.: 4 mm juv., young of M183
H203..	M	June 29	2	145	37.1	285	71	45	Juv., T.: 5 mm, young of M183
H204..	M	June 30	2	130	36.1	275	67	40	Juv., T.: 5 mm, young of M183
H229..	M	July 7	1	230	39.7	322	83	50	Ad.(?)T.:13mm,prime, except back of neck, shoulders, mid-rump
H239..	F	July 12	–	108	35.1	245	57	39	Ad.
H243..	F	July 13	3	94.5	32.8	238	57	37	Juv., almost prime, young of H239
H244..	F	July 13	3	81.8	32.7	225	55	35	Juv., almost prime, young of H239
H245..	F	July 13	3	93.1	34.1	237	55	36.5	Juv., almost prime, young of H239
H246..	F	July 13	3	93.0	34.0	240	59	37	Juv., almost prime, young of H239
H247..	F	July 13	3	89.8	33.7	235	56	36.5	Juv., almost prime, young of H239
H248..	F	July 13	3	100.7	34.0	245	54	38	Juv., almost prime, young of H239
H319..	M	July 30	2	153	37.2	290	75	44	Juv., T.: 4 mm
H361..	M	Aug. 3	2	180	39.3	315	77	48	Subad., T.: 8 mm
H395..	M	Aug. 12	1	125	37.7	305	75	41	Juv., prime except patches on jaw and breast
M410..	M	Aug. 17	2	184	39.4	304	75	–	Juv., prime
H420..	M	Aug. 21	1	157	38.3	295	68	43	Subad.,T.:8 mm,prime
M469..	F	Sept. 1	2	96.2	33.9	248	57	37	Juv., prime
H462..	M	Sept. 2	1	224	39.7	318	72	51	Juv., T.: 5 mm, prime
H486..	M	Sept. 5	2	172	38.2	287	70	46	Juv., T.: 4 mm, prime
M509..	M	Sept. 10	1	196.6	41.4	322	77	46	Subad., T.: 8 mm, prime
H546..	M	Sept. 25	2	161.4	39.2	290	65	43	Juv. (from King William Island)

Ringed Seal, *Phoca hispida* ssp.

The Ringed Seal is scarce in the comparatively brackish and unproductive waters of Sherman Basin, particularly at its eastern end, which is shallow and muddy, nor is it abundant in the surrounding waters of Chantrey Inlet, Simpson Strait, and Queen Maud Gulf.

A few Ringed Seals were seen in Chantrey Inlet in July, 1834 (Back, 1836:392; King, 1836, 2:15). Schwatka's party saw several in May, 1880, and killed two near Montreal Island (Gilder, 1881:83). Dease and Simpson (Simpson, 1843:366) found seals exceedingly numerous in Simpson Strait, but Rasmussen thought them scarce, and his appraisal of the winter kill accords with this belief (Rasmussen, 1927:230). According to Amundsen

(1908, 1:277, 283; 2:27) the sealing did not begin near Gjoa Haven until the middle of January in 1905 and did not become an important activity until some time in February. The main winter sealing camps of the region were located on the sea-ice north of Chantrey Inlet (Nourse, 1879:397; Rasmussen, 1927:177; Burwash, 1931: 34-38).

In 1957, we saw the first Ringed Seal on the ice of northern Sherman Basin on May 27. In June, a few could usually be seen on fine days from the hill behind our camp, but they were more numerous toward the mouth of Red Bay. On June 25, 15 were counted there. The last seen basking on unbroken ice, on July 7, was being molested by a Whistling Swan (*q. v.*). Our observations on seals seen from the canoe are summarized below.

On August 12 and 13, 14 were seen in 12 hours between Barrow Inlet, Adelaide Peninsula, and Gladman Point, King William Island; period included 5 hours of dusk, sea calm to slightly wavy; observations include four seals on pack near Richardson Point. August 14, none were seen in 8½ hours between Gladman Point and Grant Point; period included 2 hours of dusk; sea rough. August 15, seven seen in 7½ hours between Grant Point and Falcon Inlet; sea choppy; observations include three seen on floes. August 18, two were seen in 6 hours between Falcon Inlet and our summer camp; sea rough. August 25, three were seen in 6 hours between camp and the first rapids on Kaleet River, sea choppy to fairly rough; all the seals seen were in a 2-mile stretch of open water between groups of islets in Sherman Basin. August 26, none were seen in 3 hours between the first rapids on Kaleet River and the river mouth; river calm to fairly rough. August 28, none were seen in 5 hours between Kaleet River mouth and camp; sea calm to rough. September 8, five were seen in 6½ hours between camp and Shelter Creek; sea and weather calm with heavy fog to rough and clear. September 11, none were seen in 3 hours between near Shelter Creek and Falcon Inlet; sea fairly calm to rough. September 16, five were seen in 8 hours between Wilmot and Crampton Bay and Gladman Point, sea calm to fairly calm.

SPECIMENS COLLECTED

Field No.	Sex	Date	Maximum Depth of Blubber	Maximum Girth	Total Length	Length of Tail	Length of Hind Foot
			cm	cm	cm	cm	cm
H50............	F	June 6	approx. 7.5	106	126	11	28
H161...........	F	June 25	approx. 4.0	107	133	13	32

Bearded Seal, *Erignathus barbatus* ssp.

The Bearded Seal is rare in the vicinity of Adelaide Peninsula. We saw one in northern Sherman Basin on September 8. Two others were not positively identified, one near our camp on August 25, and one in McGillivray Bay on September 16 (for details of canoe journeys, *see* note under Ringed Seal).

Barren-ground Caribou, *Rangifer arcticus arcticus* (Richardson)

The Barren-ground Caribou is now rare and local in distribution on Adelaide Peninsula. It was formerly abundant, both as a resident and as a migrant species.

Former distribution and migrations. The Barren-ground Caribou figures in most accounts of the region. Back (1836:399–420) saw a few caribou on Montreal Island and on the peninsula ending at Point Ogle. Simpson (1843:365, 367, 370) saw several caribou on the northern shores of Adelaide Peninsula. Anderson (1940–1:11) saw some on Montreal Island, and large numbers (about 100 on August 6, 1855) on the mainland immediately to the west, most of which were bulls. He saw no caribou toward the end of his short visit, and as all the tracks led to the south, he believed that the animals had migrated in that direction. The party under M'Clintock noted traces of caribou on Montreal Island on May 17, 1859, and shot two on the coast near Elliot Bay on May 18 (M'Clintock, 1859:271). Three were killed near Montreal Island about May 25, 1880, by Schwatka's party, and an Eskimo attached to that expedition killed one near Cape Seaforth about September 19 (Gilder, 1881:83, 192). Amundsen (1908, 1:255) was informed that caribou habitually spent the summer in the neighbourhood of Starvation Cove, arriving just after the end of the char run.

There appear to have been at least two main routes across Simpson Strait followed by the migrant population, one at Eta Island opposite Cape Seaforth (Gilder, 1881:196, 197; Amundsen, 1908, 1:104, Rasmussen, 1927:214), and one past the Todd Islands, between Booth Point and (probably) Richardson Point (Amundsen, 1908:1, 97-105, 247). In 1903, herds of caribou were seen in the vicinity of Gjoa Haven on September 10, October 3, and October 8, but they appeared to be much more numerous near Booth Point (Amundsen, 1908, 1:84-99). Between the latter dates, Amundsen writes (1908, 1:104), "Herd after herd, often numbering several hundred head, passed by us and took their way to the sea." Caribou were less abundant in the region the following year, although a few were seen at the head of Schwatka Bay about the end of September, and large herds were said to have passed over the ice near the Todd Islands (Amundsen, 1908, 1:247). Schwatka's party spent the autumn of 1880 near the Eta Island crossing. They saw caribou daily in immense herds at the end of September, until the condition of the ice allowed the animals to begin crossing to the mainland on October 1. The numbers diminished rapidly over the next two weeks, and the last were seen on October 14 (Gilder, 1881:196, 197).

In the summer of 1904, near Booth Point, the first caribou were seen about June 12 (Amundsen, 1908:1, 200). In 1905, the caribou had begun to return to King William Island on May 23 (Amundsen, 1908, 1, 77). M'Clintock (1859:279) saw at Cape Herschel the tracks of caribou that appeared to have crossed directly from the mainland on May 26, 1859. He saw a young one near Cape Sabine on June 5 (1859:309).

Amundsen noted that caribou were abundant in the vicinity of Gjoa Haven in the autumn of 1903 but were exceedingly lean, whereas in the autumn of 1904, although rather scarce, they were very fat. He attributed the local scarcity and abundance to the relative dates of freeze-up at the crossing places (1908, 1:104, 106, 248). It is also possible that King William Island was overgrazed in 1903 and that the migrants were undernourished. Many weakened animals might have died on the southward migration, or part of the herd might have gone elsewhere in the spring, causing a general scarcity on the island in the summer of 1904.

The Barren-ground Caribou no longer summers on King William Island. Hoare (1927:37) was told that the natives of the island were destitute in the winter of 1924–25 because of the failure of the caribou to cross, and that none had crossed since. A caribou killed near Gjoa Haven on October 9, 1928, was believed by Burwash (1931:66) to be the first taken on the island since the autumn of 1925. By 1932, caribou were rare on the island, and their seasonal migrations to and from the mainland had practically ceased (Gibson, 1932:405).

Present numbers and distribution. We crossed the tracks of a small band of caribou on the northern coast of Sherman Basin while travelling on May 27. On their return our drivers encountered this band or another and shot five caribou out of nine. We saw no caribou on the eastern side of Sherman Basin, although a track in the mud of a nearby marsh and the relatively recent winter and summer droppings on the ridges testified to the presence of caribou in the region within the last year or two. Weathered bones were abundant, especially around old camp-sites and even on isolated hills in the middle of the eastern part of the peninsula. The fresh tracks of three caribou were seen on the beach opposite Montreal Island, where it appeared that the animals had taken to the water, perhaps to shake off the innumerable mosquitoes.

Barren-ground Caribou were relatively abundant only at Falcon Inlet, where a group of two and one of seven were seen in 14 hours of walking between August 15 and 17. The arrival of several Eskimos from the neighbourhood of Simpson Straits coincided with our own, and two men had each succeeded in killing about five caribou when we left. No caribou were seen there during 18½ hours' walking on September 13 and 14. On September 8, we saw one bull caribou on the north side of Sherman Basin opposite the largest Schwatka Island.

SPECIMENS COLLECTED

Field No.	Sex	Date	Total Length	Length of Tail	Length of Hind Foot	Remarks
			mm	mm	mm	
M405	M	Aug. 16	1,900	164	542	T.: 52 mm; back fat, half an inch thick
M414	M	Aug. –	–	–	–	Bought from Eskimos
M415	M	Aug. –	–	–	–	
M416	F	Aug. –	–	–	–	
M531	F?	–	–	–	–	Found dead on Sept. 12
M569	M?	–	–	–	–	Bought from Eskimos
M570	M?	Aug. –	–	–	–	
M571	M	Aug. –	–	–	–	
M572	M	Aug. –	–	–	–	

Muskox, *Ovibos moschatus* ssp.

The Muskox no longer occurs on Adelaide Peninsula, although it was once common, at least on the Chantrey Inlet coast. The evidence for its past occurrence on King William Island is contradictory; according to Simpson (1843:379) the southern coast of the island, although barren, abounded in "musk-cattle," but the Eskimos told M'Clintock (1859:310) that there were none on the island.

Two muskoxen were killed in the region by Back's party in 1834, one on Montreal Island on August 4, and one near Barrow Inlet on August 11 (Back, 1836: 401, 415). Anderson failed to see muskoxen on Adelaide Peninsula in 1855 but noticed lodges covered with muskox skins near Lake Franklin (1940-1:10). We found a few weathered bones of muskoxen at several old camp-sites on Adelaide Peninsula, but we saw no recent traces of this species.

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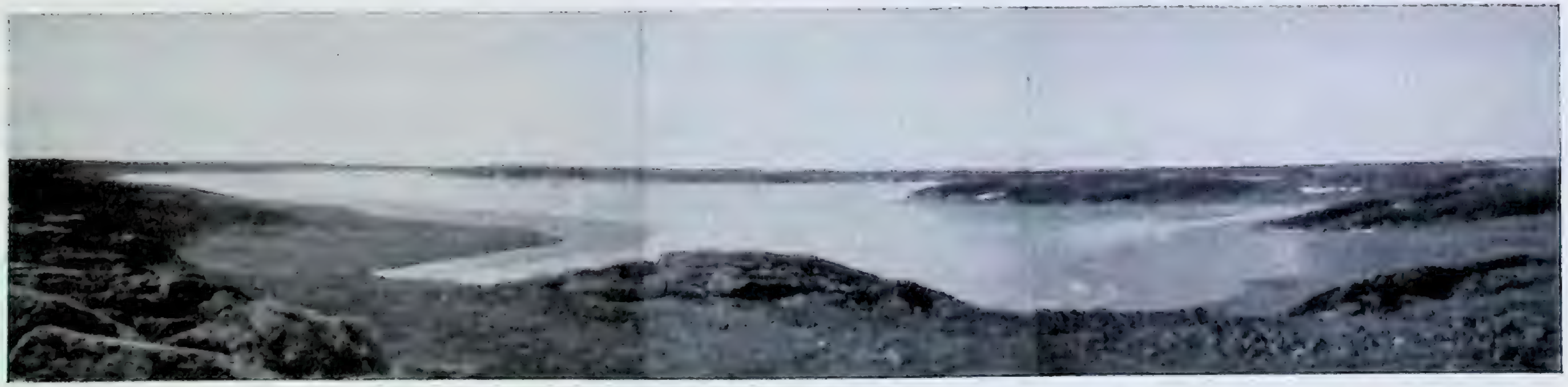
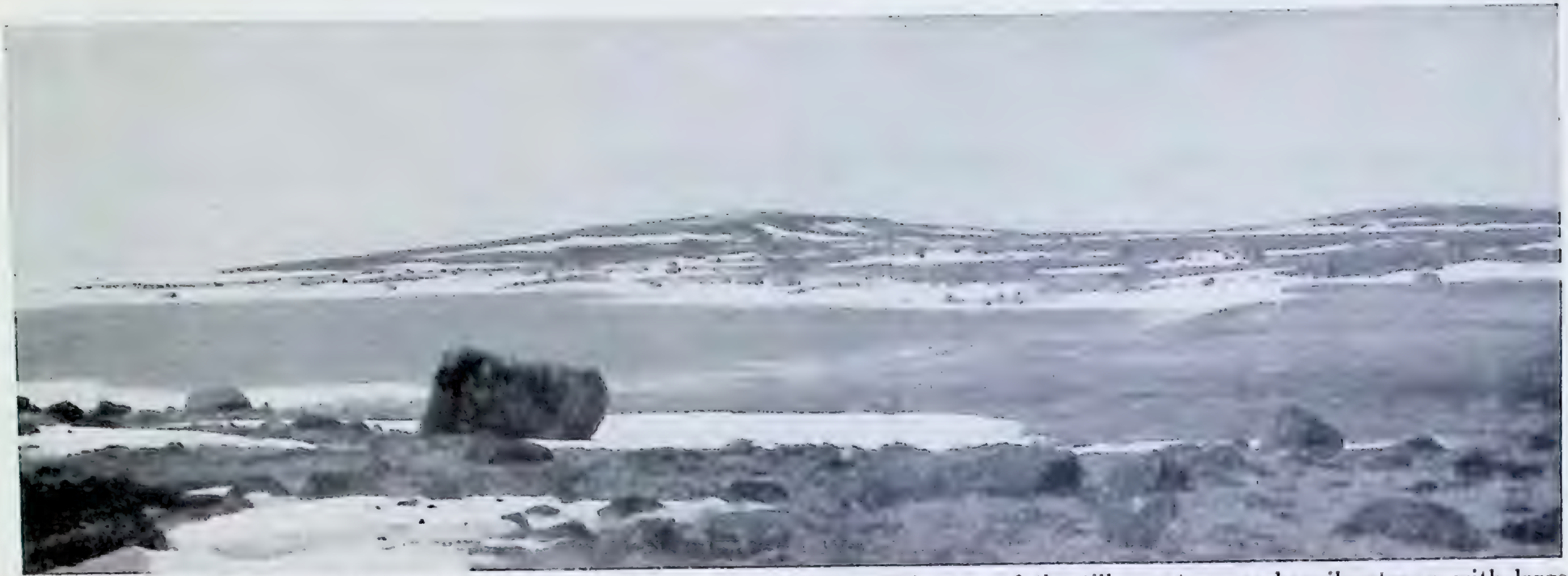
PLATE II

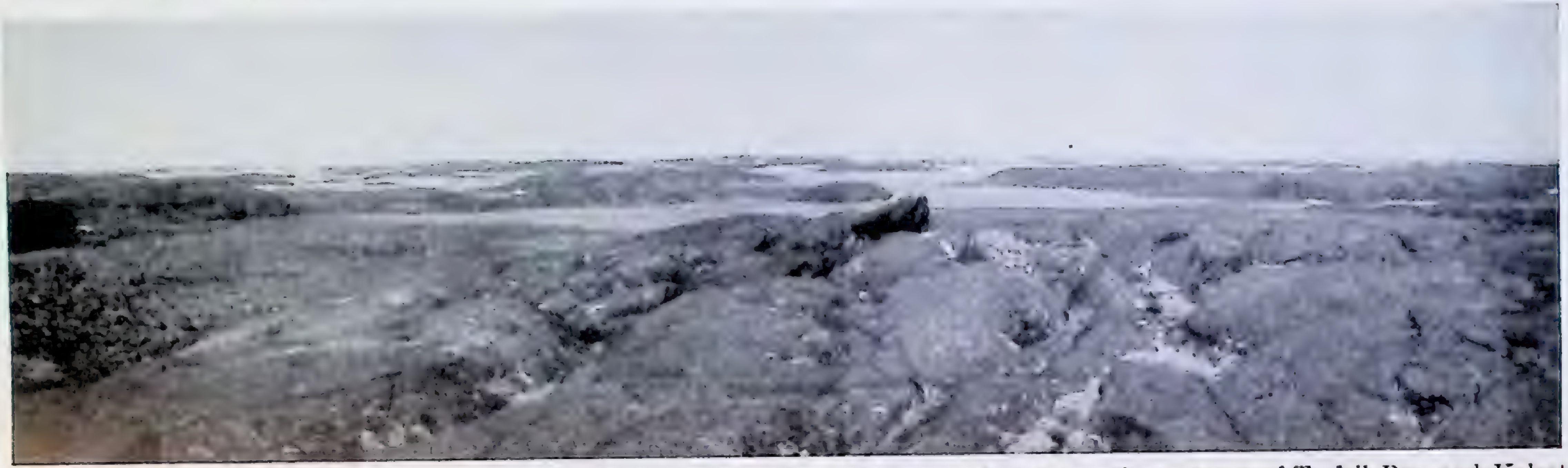
A. Looking southeast from the top of a drumlin $1\frac{1}{2}$ miles southeast of camp. A gravel 'tail' runs into flat, tussocked marshes in the centre. Isolated hillocks of Precambrian rock are scattered through the marsh on the left. July 9, 1957.



B. The estuary of Kaleet River from a little bay on the east side. Ice-plucked rocky hillocks alternate with boulder-fields and wet marshes. The estuary is still largely ice-covered. July 8, 1957.

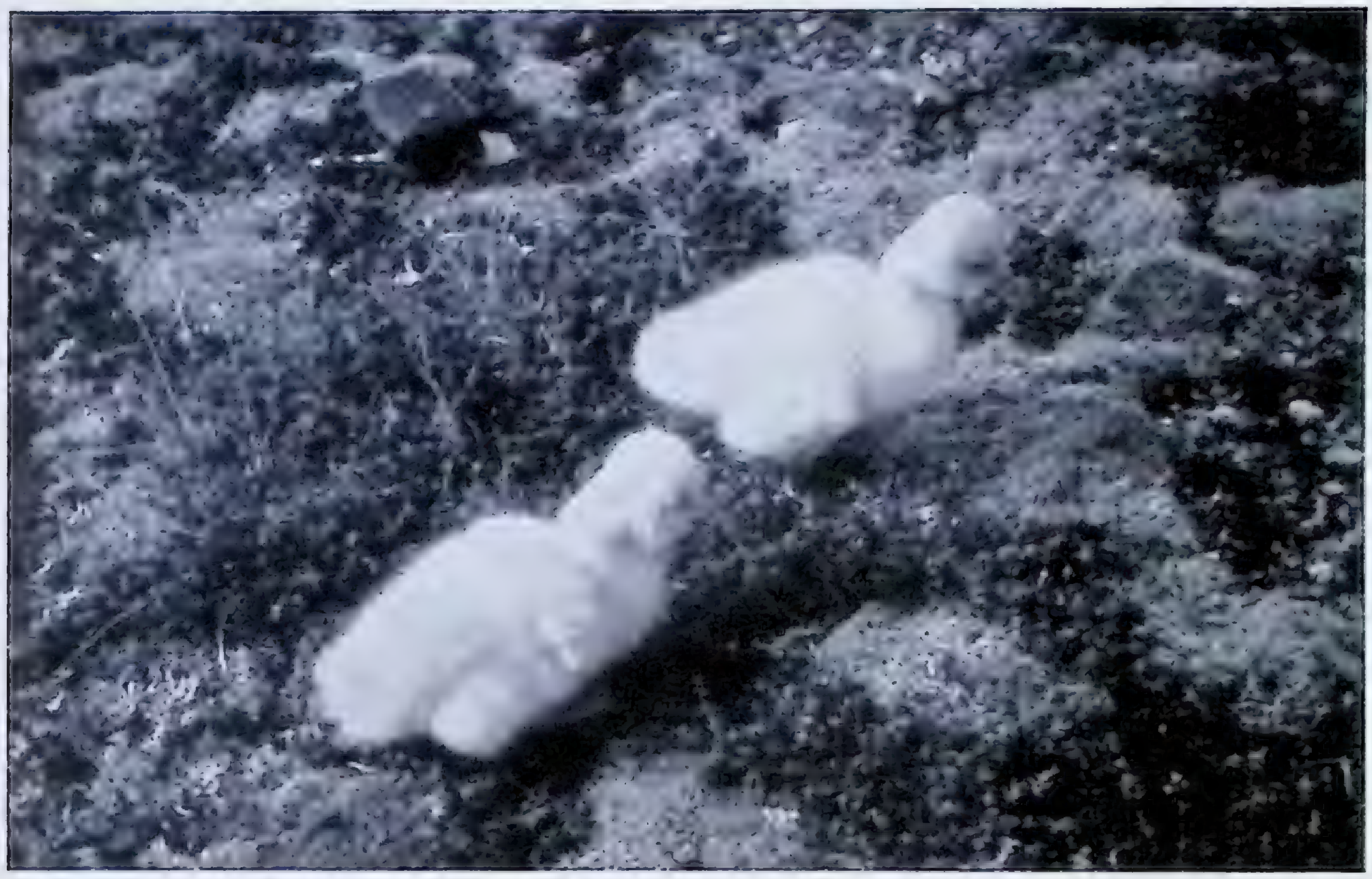


A. A hill on the east side of the mouth of Red Bay from the southeast. This part of the till country was heavily strewn with large erratic boulders. June 21, 1957.



B. Hillocks of Precambrian rock rising from a tussocked marshy plain on the peninsula between the east arm of Trefoil Bay and Kaleet River estuary. July 8, 1957.

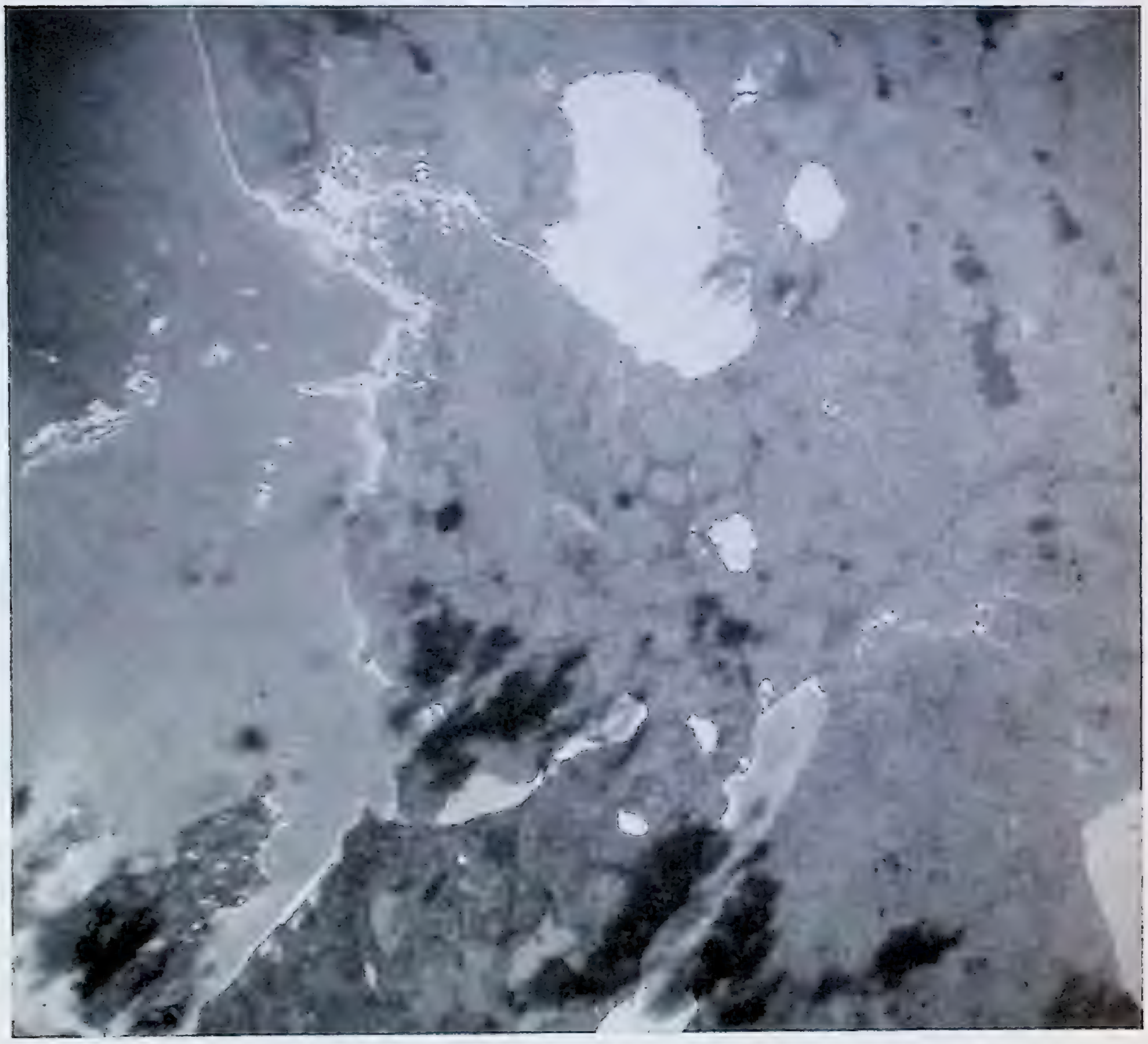
PLATE IV



A. Whistling Swan cygnets from Adelaide Peninsula. July 15, 1957.

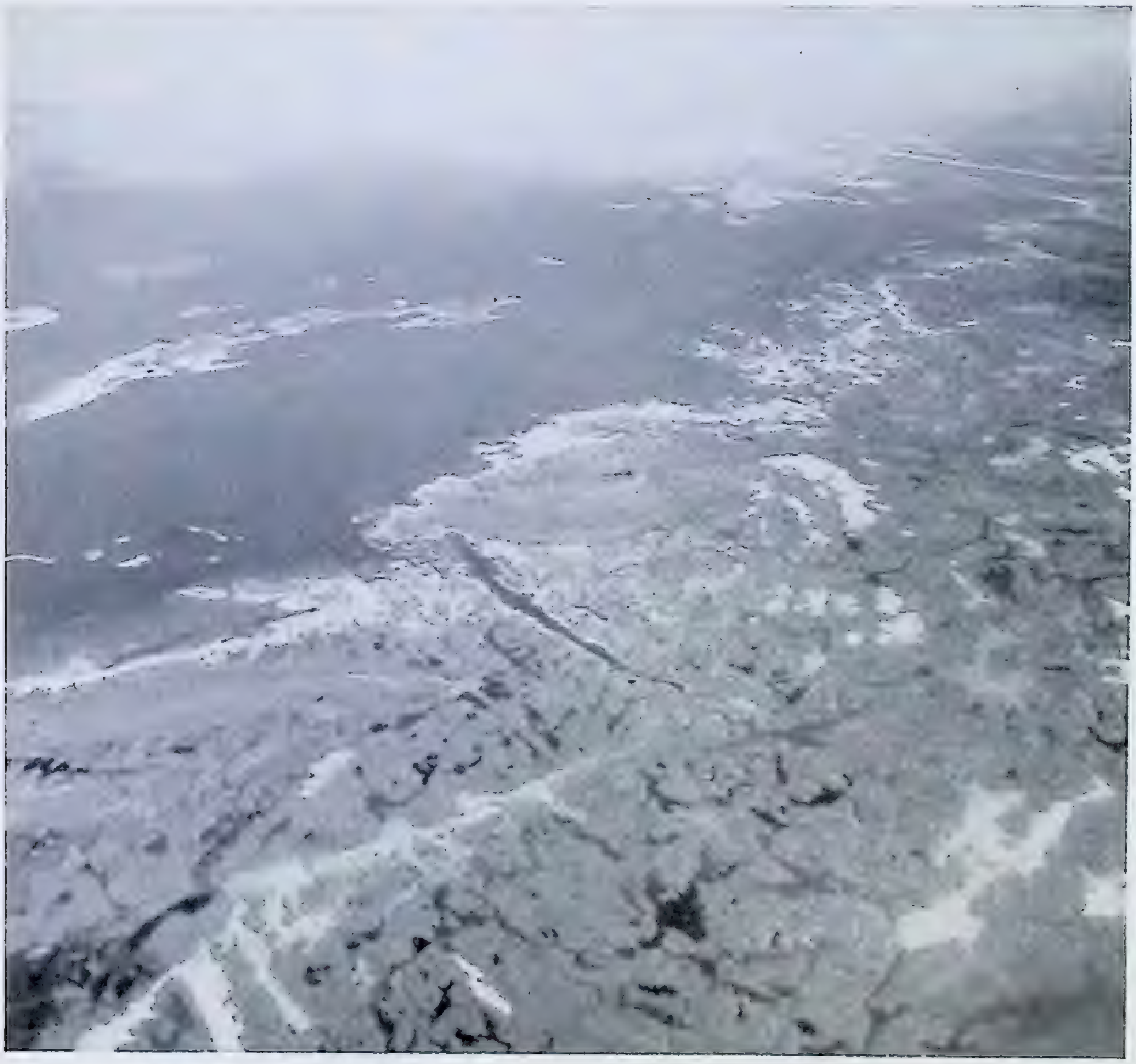
B. Our summer camp from the west, looking across the raised beaches to the marshes near Weir Creek mouth. July 15, 1957.

Plate V



The region of our summer camp on the east side of Sherman Basin, showing Weir Creek and Tern Lake (top), Crane Peninsula and the north arm of Trefoil Bay (at bottom). An esker crosses the top right corner of the picture. Two drumlins may be seen, one just above the mouth of Weir Creek, and one below and to the left of Tern Lake.

Photo, Courtesy of R.C.A.F.



Sherman Basin from the west; Falcon Inlet in foreground, Schwatka Islands in the distant left. Large hills of till flank the entrance to the inlet, which runs through hillocky (Precambrian) country.

Photo, Courtesy of R.C.A.F.